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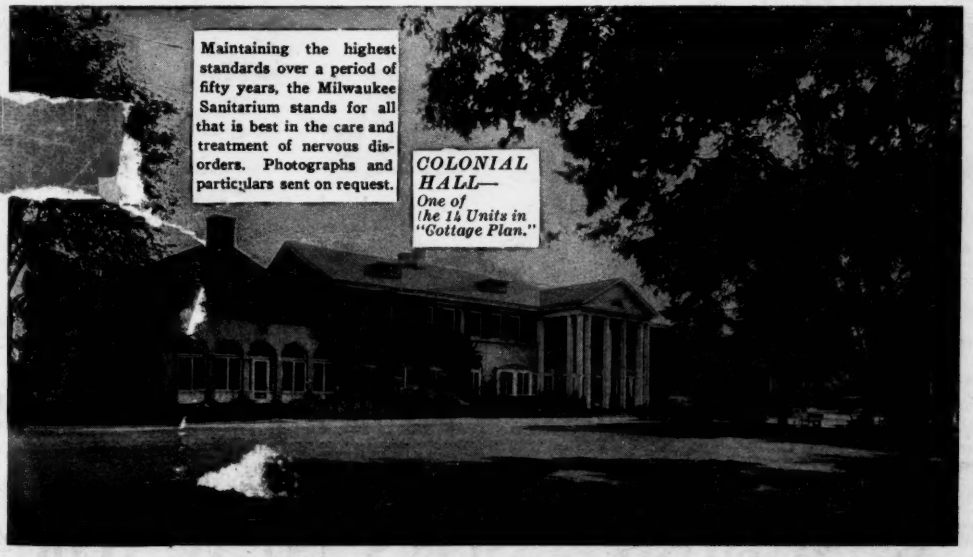
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Editorials

HAPPY NEW YEAR

If happiness lies in labor, the medical profession is assured of an unusually "Happy New Year."

For never within the history of organized medicine have such Herculean tasks both confronted and mocked the confraternity.

Money will be easier during the coming year. This much seems assured. "The way around Robinson's barn" towards this end has been over unusually hot ploughshares and spear-like stubblefields.

Now, as usual, though the medical confraternity exists to make humanity more bearable to itself, this same humanity, with thoroughly characteristic mortal perverseness seems never so happy as when it is making life almost unbearable for the doctors. So the laity has already planned a fine program of that ilk for the year 1934. Doctor, get out and bivouac!

State medicine propagandists, communists and socialists continue their attempt to try to make of organized medicine a catspaw for pulling patriotism out of the country and letting in all sorts of socialistic schemes to the everlasting undoing of this democracy. Which is in the nature of things, and is to be expected just as much as rivers freeze in winter and ice melts in the summer.

Recognition of the U. S. S. R., by the United States brings closer and closer to the heart of our daily life the vicious angles of the land where unlearned men have declared that there is neither God, nor beauty nor poetry and in whose leviathan travail there is no room for the gentle Child of Bethlehem,—nor for honor as you and I have sensed it.

Outside of the church, nowhere has Russian chaos so affected the machinery and structure of civilized life as in the practice and principle of the ethical practice and principles of medicine. At the outset, Russian medicine strikes at that elemental and sacred tenet of the Hippocratic oath as to the preservation of life and the in-

violable promise not to perform abortion. In Russia abortion is practiced openly, and under state protection and sanction, and is as optional with a woman as is the frequency of her shampoos and hair cuts. Even more so if the truth be told.

Further, to be considered by all doctors as to what shall constitute the new year and its happiness, is the fact that while with the best of intentions the heads of our government are attempting to give the country a "new deal" based upon codification, the very mischief is going to be to pay when the code busies itself with the practice of medicine. Economic plight of the physician has become dire during these years of Black-Hole-of-Calcutta finance. It is only right and just and honorable that some relief should be extended the profession. It is very commendable that Washington should try to lift from the shoulders of the medical profession the burden of swindling but not totally impecunious scalawags who never expect to pay a cent for medical services and who consider the physician as public an institution as the town pump. It is commendable for the government to feel that emergency relief medical service demands remuneration. But, the great trouble with all of these ideas is that the emergency relief has no money except that which comes out of the pockets of the citizenry in the form of levies or taxes or to a certain extent, gifts. Doctors are citizens and are not tax exempt. *Government interest* in the practice of medicine has so far proved to be more of the nature of *government interference.* It will be sad indeed if the nation that attempted to repudiate the sinister and overpowering bureaucracy of one party by an electoral landslide has simply exchanged one bureaucracy for another. Theorists and so-called business men and bankers are running the new deal down in Washington. So long as they stick to codifying banking and business they are probably going to do a fine job of it. It is to be noticed that these theorists, business men and bankers, have not sent out for any physicians to tell them how to codify the banks and the industries. We have in times past seen the army and the navy crippled by too much big business. The army and the navy has no vote. As yet the meddling camouflagists who want to divert attention from their own tricks and japeries have not deprived the doctors of the right of ballot. Absurd as such a ruling might seem it is no more far-fetched than are some of the things that have come out of Washington.

As has been written so often in these columns, and as has been quoted through the ages from the days of early Egypt, and the even earlier growing Ganges, what we would keep, we must watch.

"Eternal vigilance is the price of liberty," thundered Patrick Henry in those genetic days of the nation.

Savants and economists insist that today we stand eye to eye with the heroes of 1776. That the new revolution has us in its grip and, that, like the young Buddha, we must suffer this second nativity.

If this be true, and the powers surrounding us admit that it is at least indicated, let us labor to the end that medicine of the future shall not be deformed from forceps wielded by any bureaucratic or socialistic hands. Such affliction is not a distant dream. It is an immediate menace.

Now, Happy New Year, doctor! But remember, that while the medical profession is the greatest of all groups in its disbursement of charity, it stands alone on its own heights as the actual demonstrator of the precept that "it is more blessed to give than to receive."

So, doctor, if you would follow the heartfelt wish of your editor, and have 1934 the best and the happiest of new years for you and for yours, hark to these three cardinal points of medical economics:

1. Tune in and tune up with your local medical organizations;
2. Use your vote to protect your citizenship, your profession and your manhood; and
3. Get out your vigilance and work that vigilance hard!

HAPPY NEW YEAR!

OVERTRAINED DOCTORS MAY BE UNDERTRAINED PHYSICIANS.

Again is heard the plea for humanities rather than mechanics where medicine extends its provinces.

Contention is made with keen insight that the "too new-fashioned doctor" knows entirely too much about the end of fatal diseases and not enough about their beginnings.

This is true enough. In the rapid-fire pro-

duction of doctors by well-equipped medical schools the profession is getting a double-dose of doctors. But how about providing a few physicians?

There is an elegant disdain about a large proportion of our new acolytes of Aesculapius. This is less their fault than that of the system that breeds them. In all the bulk of research and discovery and theory and practice, somehow there has been much befogged the sense of human-ness. Truly enough "Fellowship in pain divides not smart, nor lightens aught, each man's peculiar load," but such fellowship undeniably bears the fruit of such knowledge, of such fellow discernment as turns the physician's skill into veritable medical magic such as only true pansophy can flaunt.

Not everything new is wrong, any more than everything old is right. And vice versa. The foundation stones of medical practice bore elements of strength and sagacity that it is well to remember.

The great modern drug houses with their accurate and convenient dispensing of standard formulae, removed from the physician his mortar and pestle.

Laboratory findings and institutional care remove from the physician that personal deftness of manipulation and perspective that the chef calls cunning when he makes a sauce, the sculptor art, when he pats his clay or wields his chisel with swift incisiveness.

It is sad but true, but the great pharmaceutical firms, with their alert medical and chemical staffs through their very efficiency debauch the doctor from his kingdom. It would be interesting if possible to secure accurate data upon what proportion of prescriptions are written that deal with fundamental drugs in themselves proportioned to a patient's needs or from those drugs in combination as sold in various patented pharmaceutical preparations, only too often far more expensive than analagous, simple and equally efficient preparations found in the pharmacopeia.

The great pharmaceutical companies render a rare service to the physician and to mankind by their exquisitely efficient auxiliary service to the practice of medicine. But at its best it can only be auxiliary service, and when physicians, through ignorance or what is worse, indolence, put the pharmaceutical service above their own knowledge of therapeutics then indeed does the tail begin to wag the dog with a force that is folly worse confounded.

Many of the preparations sent out by the great pharmoceutical houses are veritable Chesterfieldian combinations of curatives, such is their elegance and refinement of ingredient. By them, even the virile castor-oil becomes a pleasure to the palate. Naturally such things are expensive and "add-up" in the sum total of what it costs to make the sick well. Their advance over negligently prepared prescriptions written in the best of faith by an expert physician and only too often carelessly compounded by lax or inattentive not to say inefficient druggists, admits of no argument, much less criticism. But there are times when these highpriced pharmaceuticals could be dispensed with, and when the doctor who is a breath ahead of tomorrow in medical modes and manners, might work his own intelligence instead of handing the job over to the pharmaceutical house and enjoying the usage of proprietary formula. If the general public in the United States is the most patent medicine and nostrum minded public in the world, then in all fairness let it be admitted that the United States Medical profession has a keener yen for patented pharmaceuticals than physicians anywhere else in the world.

There are far too many young physicians who come out duly sheepskinned but handicapped by a lack of training in materia medica, without having had a course in applied therapeuties, without a course in prescription writing and with scant if any knowledge of the pharmacopeia.

With truth do many of the older practitioners accuse the neophytes of an inability, or would you call it a lesion in knowledge?—to increase weight in a patient by dietary modifications, nor how to increase an appetite nor how to discriminate in the usage of the milder laxatives nor how to modify diet, treatment, or anything else to the idiosyncrasies of the individual patient. He is this young man of high purpose and modern training, a cog himself in the handicaps of all products of the great machine age. He is becoming robotized and before long this blight will fall upon medicine itself.

Only too many full-time instructors, lacking the experience of private practice themselves, are absolutely unable to give to their students the ability to recognize the symptoms and signs

of incipient disease and the treatment of ordinary ailments. For these young men, in far too frequent instances, the curative are lies in attendance upon the final stages of fatal diseases when brought to bed in hospitals or other institutions. There is no aptness and much less ability in following a disease in its progressive from start to finish.

No less an authority than Oliver T. Osborne, professor emeritus in the Yale University School of Medicine, has looked upon these conditions and found them ill. And in his arraignment of these defects through *"The Medical Mentor,"* Dr. Osborne remarks with drastic emphasis that

"A patient cares little what you call his disease; he is interested only in what the physician is going to do to cure him, or, at least, to make him comfortable.

"This highest object of medicine, the object for which medical men are created, is now forgotten by the first-class medical schools. The patient pays the price of such neglect. Were it not for the great advances in the science of public health, which teaches how to prevent disease, and especially epidemics, the criticism of medical education today would be far more severe than it is.

"The number of persons who are ailing is increasing. This is due to the speed of our era. Men and women do not rest. Even children suffer from this speedy and restless age; too little sleep, too many side issues in school, too much competition, regulated exercises and games, noises, bright lights, dust, radios, etc., not only make children restless, but impair their health.

"Children have many infections, in spite of preventive measures, and are ailing in spite of 'sun-baths,' cod-liver oil, raw spinach, raw carrots, tomato juice, etc. Adults read the health journals, do their 'dailies,' count their calories, take vitamins, and go on diets, also to no avail.

"The medical schools of today are producing 'doctors,' but are they producing physicians? The recent M. D.s do not know how to evaluate the symptoms of incipient disease or to cure the symptoms of functional troubles.

"Students see in the hospitals only the terminal stages of chronic diseases, a few of the acute diseases, some unusual diseases, and the disturbances that may occur in post-operative cases. In the dispensaries they see an ever-moving picture of ailments of all types, but rarely ascertain the termination of even the really ill cases.

"Further, few chairs of therapeutics are still extant. The treatment of disease is supposed to be taught at the bedside. Generally, such instruction is given very meager consideration by the instructor.

"The medical graduate knows how to give transfusions, antitoxins, vaccines, and subcutaneous injections of arsenic and iron; he knows how to give cathartics, morphine hypodermics in large doses. He knows about the administration of several hypnotics, how to manage shocked conditions and, perhaps, many of the emergencies; how to treat syphilis, typhoid fever, pneumonia, some of the contagious diseases, diabetes, Bright's disease, ulcer of the stomach, and many of the terminal conditions of the serious diseases.

"Some graduates do not know how to write an ordinary simple prescription. They order ready-prepared mixtures which have the doses stated on the bottles.

"Without a course in materia medica, without a course in applied therapeutics, without a course in prescription-writing, and without any knowledge of the pharmacopeia, the young doctor begins private practise with handicaps to which older physicians were not subjected.

"The recent graduate in medicine does not know how to increase an appetite. He knows very little of the milder laxatives. He knows little about modifying the diet to suit the idiosyncrasies of the private patient. He may know how to use some of the physical therapeutic measures, but he rarely knows the harm that many of these measures may cause, even the harm of too much 'sun-bathing.'"

LAY DICTATION HAMPERS PROGRESS, LESSENS RESPECT IN THE EYES OF THE PUBLIC, AND INTERFERES WITH THE PROPER CARE OF THE SICK.

Physicians attempt today to practice medicine enmeshed by hampering laws dealing out such unscientific encumbrances as lay dictation of prescriptions with care of maternity; workman's compensation; medical publicity and education under the control of commissions or coun-

cils, or committee bureaucracy! Yet the sincere physician may wonder why Christian Science, chiropractors and the fifty-seven varieties or more of endless cults have taken advantage of this muddling, confusing and maligning of decent medical practice and are allowed to proceed practically without molestation.

Suggestion has been made that the doctors at large might as well go "whole hog" and turn medical science and medical progress over to "uplifters," and panacea promoters, and self-satisfied non-medical directors of medical destinies in general.

How much longer must this condition be tolerated? Serious consideration should be given as to where the commission power in government is thrusting the medical profession and the public generally. The narcotic situation affords an elucidative example of the tendency of the times. This shows up plainly the commission government that made possible such conditions as the present that is inexcusable, inimical and retroactive. This narcotic drug faux pas illustrates beautifully the dangers of commission government in lay existence and especially in crises that demand scientific handling. Arbitrary control of rules and regulations and interpretations by appointed officials is all wrong. Equally evil is arbitrary control of publicity by these same forces often putting over personal interpretations in the guise of legislative enactments and crushing out the honest and competent work and thought of many individual workers. The hour has struck when the profession and the public should unite in a campaign to annihilate current Prussianistic abuses, before these completely demolish self respect and self determination in an honored profession, hamper progress, lessen respect in the eyes of the public, and interfere with the proper care of the sick.

IS GROUP-HOSPITALIZATION A HEALING AID OR A HAZARD?

Although the desire of the medical profession to pull out of the muck and mire the sadly besloughed hospital situation is as deep, and as tremendous, as the need of the hospitals, it would be quite beyond the question and utterly useless for the medical profession to extend aid of any nature that is likely to land the doctors themselves in the middle of socialistic quicksands. Such a state of affairs would be far worse for the hospitals than their present plight. After all, it is the hospitals that subsist upon the medical profession and not the medical profession upon the hospitals.

Hospital economics must receive re-adjustment, as must those of the medical profession. But this re-adjustment should not be made without due scrutiny of prospective and future conditions as well as for this immediate emergency relief.

For this reason, even if for no other, the expedient of "group-hospitalization" demands careful investigation before it is recommended by the medical profession. Whether the part-payment plan, and the group-payment plan for hospital service is a fundamental unit of medical economics or merely the working cube root of socialism in another guise must first be ascertained.

If a hospital or a doctor or a group of doctors begin to traffic in financial protection against the day of illness, then what that group has to offer is nothing more nor less than the insurance against material need in that hour, and, as such, savors of the commercial and smacks of the socialistic.

The evils of so-called public or general health insurance have been inveighed against so often in these editorial columns that it would seem unnecessary to say at this time that to the eye of the editor, the so-called "group-hospitalization" contracts to date appear to be a *scheme of health insurance and nothing else.*

That the American Hospital Association has been acting in good faith is granted. The trouble would seem to be that this group does not see all of the picture. In fact the findings upon a questionnaire submitted to the various states would seem to indicate that the majority of insurance commissioners themselves are of the opinion that the whole scheme as set forth lies in the class of "smells like health insurance, tastes like health insurance, must be health insurance."

No matter how sad the state of hospital economics, certainly the Good Samaritanism of the medical profession fails to call for giving the glad hand to any such menace as well-disguised public health insurance even for the sake of the rehabilitation of the cash box of the hospitals.

The joker in the whole deck is that during these dark days of depression when the medical profession has been getting the worst of it all along with unpaid bills, the hospital percentage of collections, and as it is, would have been enough, on the same ratio, as to have gladdened the cockles of the heart of any physician.

There is more or less truth in the contention that the average hospital has been so overbuilt, and so over-equipped that is likely to consider any fandango, even the overthrow of the nation, as just another gadget to hang above its wards and windows. Hospitals have lost perspective.

But not so political agencies, and medico-politicals! They don't. State insurance commissioners cock a canny eye towards group hospitalization contracts and the relation of such contracts and service as a definite matter of *insurance business.*

Although some individual hospitals and a few hospital councils or associations have devised group-hospitalization plans from which commercial promotors have been excluded, in the main, group-hospitalization contracts are merely juicy bits in the jaws of prowling wolves of industry. Their schemes for revolutionizing the care of the sick would be ridiculous beyond belief were they not so terrible in the conditions that will be evoked eventually. Here is another hold that "big business" is getting on the science of medicine.

Almost to a man, promotors of such schemes make a *service contract claim.* What they are putting over is merely a new plan of insurance offering a definite service in case of illness or of accident. The structure of this idea is borrowed plainly from the insurance field. Especially is this true of such saliencies as the spreading of the financial load—a familiar feature of all mutual insurance companies—and the vested control of the system, as well as all the procedure of organization—the basis of establishing monthly or annual rates; the exclusions as to benefits, the method of marketing the contracts, and also the definite lay element.

Concentrated scrutiny proves that the whole thing is merely another plan of insurance. "A rose by yet another name"—

A questionnaire submitted to the insurance commissioners of ten states found eight out of the ten fully convinced of this. Their attitude was that from all legal and common sense standpoints contracts of group hospitalization are contracts of insurance. Two commissioners—Kentucky and Ohio to be exact—differ from this idea. Five states render the opinion that when group hospitalization contracts are made by any organization, corporation or individual that is NOT a hospital, *that such contracts come under the head of insurance contracts;* and that when such group hospitalization contracts are *made by the hospitals themselves—they do constitute contracts for service* and do not come within the jurisdiction of the insurance departments of such states. In still another state any such contract for service in excess of $150—the statutory limitation—is held as an insurance contract. This ruling pertains chiefly to benevolent associations providing maximum membership disability on benefits of $150. Still another state calls group hospitalization an insurance contract except when dispensed by religious, fraternal or benevolent associations.

In the results so far as obtainable already twenty-one state insurance commissioners definitely insist that group hospitalization contracts *are* insurance contracts, as against ten such officials whose opinions are of the opposite findings and four who evasively sit on the fence. There are also two insurance commissioners—Wyoming and District of Columbia—who hold no opinion and make no ruling.

Five states defer reply. The matter is of importance to the medical profession as well as to the hospitals since group hospitalization is considered seriously as a remedial factor in the ailing economics of both medicine and of the hospitalization system.

With a public educated into hospital-mindedness and with a national hospital system caught in the web of depression, with high overhead, and in many instances expensive furnishings and equipment of a nature most disproportionate for its designed purpose and expected results, and which by its very nature of service is unable to destroy or to beneficially reduce any of this load —various economic exits have been suggested, including group hospitalization, with its systems of installment or periodic payments for the benefits of low income groups. Dallas, Texas, was one of the instigators of such plans. Here is a rule that is expected to work both ways—i. e.,

for hospitals to secure from low income groups return from services that otherwise would have to be pure charity, by making payment for such service payable by installments, through the very system as such groups secure the greater portion of their economic luxuries, such as furnishings, radios and automobiles, and thus to help the hospitals, and to aid the individual by this same periodic or little-at-a-time payment.

Construing the nature of these contracts as to whether they are *insurance* against lack of care in illness or *service claims* for just such care, is the African in the woodpile. Of course during the depression hospitals have suffered sadly.

entire justification for existence—auxiliary to the healing arts. Desire to be high class hotels with therapy and surgery as a side issue has been the undoing of many an Hotel de Dieu—and contracts from such certainly smack of the precincts of the insurance policy. But hospitals like every other factor in the healing arts are mutative elements and as such must be considered and judged. The American Hospital Association has been racking its brains for some competent solution.

The table submitted by the A. M. A. shows how the states stand as to whether group hospitalization is service or insurance—i. e. a medical aid or a commercial crutch.

Opinions of State Insurance Officials on Group Hospitalization Plans

Group Hospitalization Contracts *are* Insurance Contracts	Group Hospitalization Contracts are Insurance Contracts with Certain Qualifications or Limitations	Group Hospitalization Contracts *are not* Insurance Contracts	Evasive or Indefinite Opinion as to Group Hospitalization Contracts	No Ruling or Opinion	Awaiting Opinions
Alabama	Kansas	Arizona	Delaware	District of Columbia	Colorado
Arkansas	Maine	California	Nevada	Wyoming	Illinois
Florida	Missouri	Connecticut	New Hampshire		Louisiana
Georgia	Tennessee	Kentucky*	New Jersey		South Carolina
Idaho*	Texas	Massachusetts			Washington
Indiana	Virginia	Minnesota			
Iowa*	West Virginia	Montana			
Maryland*		North Carolina			
Michigan		North Dakota			
Mississippi		Ohio*			
Nebraska*					
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*Written report submitted.

Not only have their dividends from investments decreased, and in some instances the investments themselves been wiped out,—but hospitals are able no longer to secure cash by huge financial campaigns, or from wealthy philanthropists who are also among the missing. Yet hospitals must go on. Their economic scheme must be rehabilitated, whether by group hospitalization, reduced overhead or institutional mergers.

Whatever the answer, hospitals are adjuncts to the practice of medicine and therein lies their

A tentative plan for group hospitalization as practically approved by the American Hospital association has been summarized as

1. Those who wish to receive the benefits of the "group hospitalization plan" shall pay an annual fee ranging from $6 to $12.

2. The hospital agrees in return for this annual fee to furnish each subscriber such hospital service as he may require during any year covered by his fee. The hospital service is limited by the exclusion of certain diseases and to a def-

inite period of service, but embraces all services ordinarily rendered by a community hospital. The plan does not include payment of physicians, however.

As to this idea the opinion of the counsel for the Wisconsin State Hospital Association was summarized, for the convenience of the Commissioner of Insurance as follows:

1. Counsel calls our attention to the fact that there is no statutory definition of insurance in Wisconsin, but that section 209/11, Stats. of 1931, prohibits any "corporation, association, partnership, or individual" from engaging in "any business of insurance of any kind" without complying with the conditions and restrictions contained in the insurance statutes.

2. Counsel states further that in the absence of a statutory definition, general definitions are probably applicable in a limited degree, but that what is really controlling in determining whether a given scheme is "insurance" or whether those interested in it are engaged in the "business of insurance" is the ultimate purpose which it seeks to accomplish.

3. No longer is "insurance" or the "business of insurance" a mere "wager," "gamble," or "speculation." It has become a highly developed system for distributing "losses, damages, and liabilities among groups on a scientific actuarial basis."

4. Insurance has been variously defined as "a contract whereby one undertakes to indemnify another against loss, damage or liability arising from an unknown or contingent event"; or as an "agreement by which one party for a consideration promises to pay money or its equivalent, or to do an act valuable to the insured, upon the destruction, loss or injury of something in which the other party has an interest"; or, in Wisconsin (See: *Shakman vs. U. S. Credit System,* 92 Wisconsin 366,374) as "a contract whereby one party agrees to wholly or partially indemnify another for the loss or damage which he may suffer from a specified peril."

5. Counsel carefully emphasizes that the "business of insurance" does not relate to the making of a single contract to secure a person against loss, but rather is founded upon the sharing of losses by a group which assumes common risks.

6. It is now universally recognized that "insurance contracts are so far matters of public interest that they may be reasonably regulated under the police power." See *State Ex Rel. Aetna Ins. Co. vs. Fowler,* 196, Wisconsin 451, 456, and *State Ex. Rel. U. S. F. & G. Co., vs. Smith* 94, Wis. 309, 320.

The Commissioner of Insurance of Wisconsin, when asked whether this "periodic payment plan for the purchase of hospital care" is a contract of insurance, and whether those engaged in it will be engaged in the "insurance business" within the meaning and intentment of the state law replied in part:

The State of Wisconsin
Department of Insurance
Aug. 22, 1933.

Mr. ————, Secretary Wisconsin Hospital Association, Madison, Wisconsin.

Dear Sir:—Re: The Periodic Payment Plan for the Purchase of Hospital Care.

This is to acknowledge receipt of your communication and pamphlet with reference to the above plan. In our opinion the above proposal comes within the purview of insurance, and could only be done by a duly licensed insurance company. In answer to your second question, we believe that an insurance company licensed to transact the business mentioned in section 201.04 (4), Disability Insurance, could issue such certificates as in our opinion, it is a form of health and accident insurance.

It is true that Wisconsin Statutes do not define insurance, but our Wisconsin courts have defined insurance especially in the case of "Shakman vs. U. S. Credit System" as "A contract whereby one party agrees to wholly or partially indemnify another for the loss or damage which he may suffer from a specified peril." In this plan, one party agrees to wholly or partially indemnify another for a loss or damage which he may suffer from a specified peril. Whether the agreement is made between the hospital and an individual, or a group of individuals does not take it out of the realm of insurance. A large amount of insurance written in this state is on the group plan but companies writing this insurance must necessarily comply with our insurance laws.

Section 209/11 prohibits any organization from transacting insurance business of any kind without first complying with our law. The or-

ganization would then have to be licensed to transact insurance as mentioned in subsection (4) of section 201.04. The solicitors obtaining subscriptions to this plan would have to comply with our statutes and obtain a solicitor's license. Section 209.05 defines an agent, but makes an exemption where it can be shown that he receives no commission.

On page 6 of the pamphlet, Effective Presentation to the Public, provision is made for payment of a commission, and the solicitor would therefore have to be licensed.

Under Extension of Benefits to Dependents on page 3, there appears to be a discrimination in that a discount is allowed to a dependent of a member when the association receives no contribution for this service. We are referring to the second alternative mentioned in this paragraph.

Exclusion of Certain Diseases. Your association does not intend to take care of the hospital charges of those members who receive such care through workmen's compensation benefits. This appears to be a discrimination among members in that one member for a stipulated contribution receives hospital care, while the other does not if the hospital care is paid for by a compensating company.

Under Finance, as outlined on pages 4 and 5, a member is not assured of hospitalization when he needs it. The association reserves the right to return to a member a specified amount. In case of wide-spread disaster, it is doubtful whether the amount returned to a member will reach anywhere near the amount of what he would have received in benefits, had the member been accepted in the hospital. A discrimination would result as to the benefit derived by members paying a similar sum for their protection.

We have attempted to point out the inequities in the plan and also to advise that in our opinion the plan falls within the confines of our insurance statutes.

Therein lies food for thought, and a warning for investigation.

SIGN AND RETURN THE A. M. A. DIRECTORY CARD

The thirteenth edition of the A. M. A. Medical Directory is scheduled to appear about July, 1934. The last edition was issued in 1931. Recently each physician in Illinois was furnished with a card upon which to record data pertaining to his professional status. There is a crying need for a new up-to-date directory; it is essential that data included in the directory be correct.

We are informed that many physicians received the cards sent by the A. M. A. but have not filled out and returned them. We urge every ethical physician in Illinois to promptly fill out and return the data card to the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

If any medical reader failed to receive such card, he should write to the American Medical Association, 535 North Dearborn Street, Chicago, Illinois, calling attention to the fact.

The forthcoming 1934 Directory meets a vital need.

Instead of the customary two years, there is a period of three years between the last edition of the American Medical Directory and the new forthcoming 13th edition. At least 50% more corrections may therefore be expected. Indications are that the new directory will show at least 60,000 changes of address by physicians; 17,000 names of new physicians and 7,000 dropped on account of deaths. The same increased ratio of changes and corrections will naturally apply to all other data. This new edition will therefore be of extraordinary value to all users.

There was never a time when it was more important for every active physician to be a member of his County and State medical organizations and a Fellow of the American Medical Association.

DOCTORS DESIRING TO PRESENT PAPERS AT 1934 ANNUAL MEETING.

Members of the Illinois State Medical Society desiring to present papers at the 1934 Annual Meeting to be held in Springfield, May 15, 16, 17, 1934, should get in touch with the proper section officers as soon as possible.

Owing to the large membership of the Society, it is desirable to place members on the program each year who have not appeared in recent years.

The number of speakers at the annual meeting for each section is limited; consequently it is

desired that all papers should be of interest to the members in general. Any member desiring to make a presentation at the annual meeting in any of the five scientific sections should write the Section Officers, giving the title of the paper, and an abstract of the same. If interesting case reports are desired to be given, tell briefly about the case of unusual interest, in making application for the place on the program.

It is the desire of all officers of the Sections to make the 1934 Annual Meeting program an outstanding one, and arrange it to the best advantage of all members. On Thursday morning, the last day of the meeting, it is planned to have a joint session of all five scientific sections, and present papers which will be of interest to all members regardless of their own special inclinations in practice.

Members desiring to make a presentation of either a paper or interesting case report, should get in touch with the proper Section Officers at an early date. The officers of each Section are herewith given.

Section on Medicine

R. F. Herndon, Chairman, Springfield.

Don C. Sutton, Secretary, 30 North Michigan Blvd., Chicago.

Section on Surgery

George W. Post, Chairman, 4010 West Madison Street, Chicago.

B. V. McClanahan, Secretary, Galesburg.

Section on Eye, Ear, Nose and Throat

George S. Duntley, Chairman, Macomb.

O. B. Nugent, Secretary, 231 West Washington Street, Chicago.

Section on Public Health and Hygiene

J. Howard Beard, Chairman, Urbana.

Lloyd Arnold, Secretary, 1817 West Polk Street, Chicago.

Section on Radiology

Robert F. Arens, Chairman, 2839 Ellis Avenue, Chicago.

F. Flynn, Secretary, Decatur.

BREAKDOWN OF ENGLAND'S NATIONAL HEALTH INSURANCE SYSTEM.

The A. M. A. Regular London Correspondent —under date of August 21, 1933, wrote as follows relative to the breakdown of the National Health Insurance System. We quote:

"The socialist party in this country has one remedy for every ill—state expenditure. But that this produces more evil than it remedies they will not see, even when the country is brought to the brink of ruin, as it was by the socialist government. The prolonged unemployment, largely the result of their policy, has caused in some cases a breakdown of the system of contributions for the financing of the national health insurance system. Their remedy was easy: the state made good the deficiency. But after the financial crisis, which led to the downfall of the socialists, the new government decided to bring to an end this arrangement, which kept in the insurance system persons no longer qualified by contributions. It was provided that all insured persons who had been continuously unemployed for a period of two years and nine months would at the end of 1933 cease to be entitled to medical benefit. The government estimated that the number of persons so affected would be 100,000, but the continuance of the depression may well cause that figure to be exceeded. The insurance committees are deeply concerned and at their annual meeting it was pointed out that 'these unfortunate people must in future rely upon the resources of public assistance.' But in the distressed areas the resources for this purpose are already strained to the uttermost. The committees therefore suggest that the government should find the money or that the insurance funds might meet the cost by a small adjustment of the central fund. On the other hand, the government desires 'to preserve the sanctity of the insurance principle.' It may be pointed out that in any case 'the insurance principle' is only partial, for normally a much greater part of the cost is provided by contributions from the government and the employers than from those who benefit by the system. As has been frequently pointed out, the so-called insurance system is more socialistic than anything else and, like all socialism, fails financially and makes constant demands on the state."

ADVERTISING SOLICITORS WANTED

The ILLINOIS MEDICAL JOURNAL desires in Chicago and in each of the principal cities in the United States solicitors, preferably persons with medical advertising experience. No guaranteed salary. Compensation solely on commission basis.

ILLINOIS MEDICAL JOURNAL
6221 Kenmore Avenue, Chicago, Illinois

MEDICAL ECONOMICS

WHY NOT CONDUCT OUR BUSINESS IN A BUSINESS WAY?

With this number of the ILLINOIS MEDICAL JOURNAL we are starting a new year. At the close of the old year and beginning of the new, it is the usual custom with most successful business men to study the problems pertaining to their individual lines of work. If improvements can be made in the system of doing business, this is the time when they are usually started. If faulty systems have been in use they are discarded, or modified to make them more in keeping with the times.

The members of the Medical Profession are generally accused of being poor business men. Many of us keep good, fair, or "passing" records of our patients with case histories, record of our findings, and the treatment prescribed in each case. Many members of the Illinois State Medical Society have records of patients on file, dating more than twenty years, and can easily recall the treatment prescribed for "Willie's bronchitis in 1914, Mary's croup in 1917, or Grandfather's pneumonia in 1926."

How many physicians in Illinois keep complete, or even adequate records of their receipts and expenditures for the year which has just past, a record of all charity work done, the amount spent for the use of their automobile in doing their professional work, the amount on their books which is collectible, doubtful, and that which will never be paid?

How many of us actually know approximately what our overhead is for the past year, and perhaps for the few years preceding it?

The Committee on Medical Economics of the Illinois State Medical Society is anxious to accumulate reliable data along this line, from different parts of the state, as it will be of much value to us in our contacts with many groups interested in some of the phases of medical practice.

In our dealings with Relief Organizations, we are frequently asked for reliable information along this line, and unfortunately, have been unable to give even a fair estimate from actual figures available. We would like to suggest that members of our Society during the year 1934, keep records of these various expenditures, classifying same, keeping in mind especially,—

1. Rental paid during the year.
2. Cost of heat, light, gas, etc., in the office.
3. Cost of supplies purchased during the year, with an estimate of those actually used.
4. Cost of renewal of equipment, or additions to same.
5. An estimate of the cost of your present office equipment.
6. Actual automobile costs, with upkeep, especially that pertaining to your work.
7. Amount spent during the year in attending medical meetings, clinics, or for post graduate work.
8. Cash receipts for the year.
9. Amount placed on ledger.
10. Percentage of bills collected during the year, of the total amount of work actually done.
11. Amount of charity work done.
12. Gross income from the year's work.
13. Actual net cash income.

At an early date, the Committee on Medical Economics is going to send out questionnaires to a considerable number of physicians selected from different parts of Illinois, which will include general practitioners, both in the rural and urban communities, specialists in different branches of medical work, and also to the teaching members of the profession. Some state medical societies are making, or have made such a survey recently, and in two or three instances, the data has been accumulated at a considerable expense to the society.

It is our intention to procure a considerable amount of data during the coming year with a nominal expense, which will be principally postage. When these questionnaires are received, it is hoped that every physician receiving one, will give as complete information on the subject as possible, and there will be no embarrassment to anyone, as the name of the physician making the return will not appear on it.

From the vast amount of data along economic lines which has been accumulated during the past few years, it is estimated that the American physicians are actually doing more than one million dollars worth of work each day which is considered as charity work, and it is quite obvious that members of the Illinois State Medical Society are doing their share of this work.

The information received from the series of questionnaires which will be sent out during the coming months will be used in a comprehensive

report which our committee hopes to present next May at the Annual Meeting in Springfield, and with full cooperation on the part of the members of the Society, we are sure that it will be something well worth the effort, and minimum expense.

The Committee on Medical Economics wishes every member of the Illinois State Medical Society a Happy and more Prosperous New Year, and may we add, let us as individuals and members of this Society stand back of our President 100% in his efforts to overcome the monster, depression.

E. S. HAMILTON,

Chairman, Committee Medical Economics, Illinois State Medical Society.

Correspondence

EVERY FAMILY DOCTOR A PUBLIC HEALTH OFFICER

The problems of epidemic disease, nutrition and school health are always with us, and the family doctor who cares for the larger portion of these patients, needs frequent and repeated help along these subjects because of the kaleidoscopic changes in these diseases with seasonal and economic conditions. Discussions at medical meetings or in text-books or magazines are quite inadequate to a full appreciation of the diagnosis, complications and therapeutic management because these subjects are never considered until wide devastation has occurred.

Local health officers, supported by the professional staff of the State Department of Health, and members of the United States Health Service, whose entire energies are devoted to contagious, nutritional and deficiency diseases, can render inestimable help to the general practitioners in an educational way. Each local health officer is the senior authority on this class of diseases in his own district and the family doctor is his representative in the affected household. Local health officers would do well to hold regular meetings with the family doctors about them, inviting the group to round table discussions of diseases locally epidemic. In some instances a modified "ward walk" can be instituted if the family doctor will invite the group to visit his patient.

Such meetings can be held at stated intervals and thus become a practitioner's study class in communicable diseases, a real post-graduate course as is presented at present nowhere outside of the contagious disease hospitals in large cities. Moreover these meetings will be far more profitable because they will have the local atmosphere and not take the doctor away from his work. The family doctor, joining such a group, will review under an able teacher the very disease he is combating at that time, he will acquaint himself with the most recent diagnostic procedures and methods of treatment, he will recognize obscure symptom complexes and be prepared immediately with the most potent therapy.

All of us with years of experience behind us, and an equal amount of time away from the feet of the learned, appreciate our shortcomings, but we are humanly weak and try to keep our failings from public notice and many recent discoveries like the Schick test, toxoid vaccination or the use of convalescent poliomyelitis serum are not familiar to us. Programs such as above outlined will make better doctors of us, help us to shorten the length of every illness, minimize its complications, morbidity and mortality, and thus proportionately reduce the cost of sickness, and, last but not least, it will develop a better understanding and a friendly cooperation between all concerned.

Public Policy Committee,
Illinois State Medical Society.

TENDENCY OF PASSING DIAGNOSIS UP TO LABORATORY

To The Editor: The December issue of the ILLINOIS MEDICAL JOURNAL publishes an editorial under the caption, "The Present Day Tendency of Passing the Question of Diagnosis Up to the Laboratories."

With due deference to editorial opinion and prerogative I would nevertheless enter a word or two of rebuttal on behalf of the medical specialists. As a regular reader of the JOURNAL and an admirer of the militant spirit that characterizes many of the editorials, I have been not unmindful of a tendency for several years to deprecate the work of the specialists. To array our general practitioners against the specialist is, to my way of thinking, like the mother seeking to glorify one of her sons at the expense of degrading the other. As a well known radio

character would say: "We are all brothers in that great fraternity."

So one could have more respect for the high minded and skilled general practitioner than the writer, but is it not a self-evident truth that the specialist in medicine and surgery is a natural product of evolution in a human desire to excel in some particular direction. There are numerous parallels to this, with the profession of teaching as an example. The modern medical laboratory is the answer to the need of physicians for information upon which to base an accurate diagnosis.

In your editorial you state: "Doctors of years gone by seemed to be able to meet all the therapeutics that might arise. Experience and observation says this was done with success." If you will pardon me, this seems a most extravagant statement. I am rather of the belief that the physicians of an earlier day knew only too well their limitations and handicaps. Is it not a logical conclusion that the specialists in medicine and surgery and the laboratories have naturally developed to meet those crying needs? The wise physician of today, like his predecessor, is also aware of his limitations. He realizes that he does not know it all. From my own observation over a considerable span of years, it is the doctor of broad knowledge and experience who seeks the aid and cooperation of the medical specialist and laboratory expert. He is a safe man. The general practitioner of the self-sufficient type and particularly the one who parades before his community as an all-around specialist is not always the personification of safety.

Furthermore, are we not just a little further along the road in our profession than the doctors of fifty years ago, and will not the need of new aids in diagnosis and treatment to meet changing conditions lead to other changes in the surface aspect of our profession? At heart, it will doubtless remain much the same as in the past. There always will be doctors, whether general practitioners, specialists or laboratory technicians, who will honestly, honorably and unselfishly devote themselves to the discovery, diagnosis and alleviation of disease.

It is the general tenor of your editorial that I object to. There is too much disintegration in the ranks of our profession now. There is a lowering of our general resistance, and we are attacked in vulnerable spots from many sources. We need cohesiveness above all things if we would survive, and to this end should strive to live together peacefully and harmoniously, general practitioner, specialist and laboratory expert, and thus repel the common enemy on a broader and stronger front.

Charles B. Younger.

CHARGING STUDENTS MEMBERS OF PHYSICIANS FAMILIES FOR MEDICAL SERVICES

WHEREAS: Occasional misunderstandings have arisen in the minds of physicians over the state as to the propriety of students of the University of Illinois who are members of Physicians families being charged for medical and surgical services, and,

WHEREAS: Such misunderstandings are invariably due to a lack of knowledge of conditions as they exist in this community, therefore be it

Resolved: That we, the members of the Champaign County Medical Society, do agree to charge students of the University of Illinois who are relatives of physicians on the same basis as charges are made to other students.

The above is a copy of a Resolution adopted by the Champaign County Medical Society March 11, 1926.

Glen R. Ingram, M. D.,
Secretary,
Champaign County Medical Society.

THE GENERAL PRACTITIONER IS THE SHEET ANCHOR OF THE AMERICAN PEOPLE IN THEIR TIME OF STRESS

No one knows the trials and tribulations of the general practitioner better than a general practitioner. No one knows better than his fellow practitioners how from day to day he studies the ills of his patients with the skill and knowledge gleaned from years of experience and not from books. No one knows, better than he, that in the treatment of illnesses the human, common sense side of medicine ranks as high, and probably higher, than the ultrascientific side. No specialist can practice medicine with the same altruism and humanitarianism.

The unfortunate side of the practice of medicine from the standpoint of general practitioner is that he (the general practitioner) is also an ordinary human. To maintain life, he is ob-

liged to eat; to make his calls, he is obliged to use an automobile, and to maintain that automobile he must use gasoline, oil, tires and make repairs. He is obliged to wear clothes; he must live in a house and therefore heat, light and a telephone are essentials.

He may be the greatest of humanitarians and his motives the most altruistic but when his telephone bill is due or his light bill is due or he fills the tank of his car with gasoline, to the telephone company, the light company or the oil company he is just another customer. He pays just as everyone else pays regardless of his idealism. He may be preached to by full time paid professors or by those far removed from the problems of the actual practice of medicine about ideals when the practical problem of the time is the stretching of one dollar until it is threadbare.

The general practitioner takes a just pride in his profession and a pride in carrying a message of cheer to those who are in distress. With his belt pulled tight and his chin up, he carries on. He faces the unfair competition of quacks, dispensaries, clinics and hospitals, newspaper notices telling of the uncanny skill of a chosen few and the specialistic blah in the lay magazines.

Nevertheless the general practitioner serves his patients, in good times and bad, and like the Rock of Gibraltar stands firm and steadfast. He is the sheet anchor of the American people in their time of stress.

Thomas P. Foley,
Chicago Medical Society Bulletin.

Chicago Medical Society Bulletin, Nov. 25, 1933.

THE SPIRIT FOR THE NEW YEAR 1934

Mrs. William R. Cubbins

Public Relations Chairman of the Woman's Auxiliary to the Illinois State Medical Society

Our National President, Mrs. James Blake, in her first letter to the Auxiliaries in the October *A. M. A. Bulletin* expresses clearly the duties of a public relations committee and its activities: "I am vitally interested in the public relations part of your program work as County Auxiliaries. I feel your program is the reason for your existence; that it should be the lure to membership. To be a live wire in your county and state, you must have a program that is definite in purpose, that touches live issues, that invites intelligent discussion and that is shared with the public through properly directed publicity. By means of its various contacts, an auxiliary becomes a vitalizing influence in any community."

Is this not a challenge to the members of our auxiliaries and to all physicians' wives to have a very definite part in the World's work today? Communities, clubs and individuals are health conscious and are asking for the latest discussions on health problems. Who should be better qualified to participate in such programs than the carefully directed thinking wife of a fine physician? She is thus privileged to be a part of the important public service of the great dignified medical profession, an "unselfish profession that seeks to do away with itself by lessening disease and increasing health." When the work of the Auxiliary and the vital need for discussion of medical topics in this worried world are really understood, no physician or his wife can afford not to be a part of a program of properly directed health education.

Women's clubs have led the way in fine health programs. Many of us have shared in directing these activities which have included the work of the visiting nurses, pure milk and pure food, prevention of blindness, tuberculosis, cancer control and other important measures. Now that we, the wives of medical men, are organized we are in a strategic position and should seek all such contacts for better public relations. The Woman's Auxiliary to the Illinois State Medical Society although organzied only a few years, by pioneering work has laid a firm foundation.

The Educational Committee of the Illinois State Medical Society is the service bureau for our publicity, furnishing material, radio programs, health talks, all of which are for the public. The activities of the Committee are most carefully directed and keep abreast with the advances in science.

Your chairman early this fall received her instructions from the National Auxiliary as follows: "Continued effort for close cooperation among auxiliary members and an enlarged public contact should be made, placing the purpose and our aims before other organizations. This to be done by public lectures, etc."

Our aim is to assist in the advancement of the prevention of disease, to secure better legislation indicated in the pursuance of these ends, and to advance all professional interests.

On September 20, 1933, your chairman called a conference tea at her home to which were invited State Officers and Chicago members of the Board, the President and Public Relations Chairmen of county auxiliaries and the State President. The meeting was called for confirmation of a program of the chairmen of organization and public relations of the State and to arrange for a large public meeting on October 11 at the Illinois Host House, Century of Progress. An intensive publicity campaign was carried on. Hundreds of letters announcing the speaker, time, place and subject were sent to all auxiliaries in the state, to federated clubs, benevolent and public health organizations, men's medical societies. The subject "Mental Health in the Home" was chosen because of the unrest in the changing world of today which affects the members in

our homes and our future citizens. Dr. Charles F. Read, an authority on mental health, was the speaker and his interesting lecture was published in the November issue of the ILLINOIS MEDICAL JOURNAL. The time was selected because of the opening of the year's work and our own Illinois Host House at A Century of Progress chosen as the place because it was part of a history making epoch. Many replies pledging support were received. One organization wrote: "The notice of your October 11 meeting has been received. An announcement concerning it will be made to our nurses and is being placed on our bulletin boards." Our contacts were enlarged as shown by similar replies from many other organizations.

In September, your chairman spoke before the organization of Club Presidents of Cook County announcing this meeting and placing in the hands of each member a notice of the Speakers Bureau of the Educational Committee of the State Medical Society. The Committee offered speakers on subjects of timely interest such as, "Health and Leisure Time," "Growing Old Gracefully," "Mental Health," "Health and the Depression," "The Hopeful Side of the Cancer Problem." Five hundred notices of Doctor Read's lecture were given out at the Club Presidents Conference, three thousand were printed and distributed through the exhibitors of A Century of Progress, 2400 went to prominent women of the State from the Illinois Host House in its official bulletin. The Woman's Auxiliary to the Chicago Medical Society sent 400 postal cards to medical homes. About 6500 individual notices were sent out for this meeting and many thousands of homes were reached through the Illinois and American Medical Journals. This indicates the wide variety of publicity reaching many types of people.

The day of the meeting was ideal, beautiful Indian summer and while the audience was not large it was representative as was the attendance at the luncheon which followed in the Trustees Lounge in the Hall of Science. We were honored by having our State President and other prominent guests. Congratulatory letters were received from many distinguished men who were unable to attend because of the American College of Surgeons which was then in session in Chicago. Through a member we were able to show the work of the Janiel Shop by modeling dresses made by the handicapped of the Spaulding School for Crippled Children. Dancing children at the style show at the Casino served as models.

The officers, chairmen and members of the Chicago Auxiliary gave their wholehearted cooperation in sponsoring this entire program.

A plan for a competitive school essay contest on public health subjects was suggested for Chicago, but on account of prizes offered, was rejected. This is now in the hands of the superintendent of schools for his further consideration. Such a contest would seem feasible for the work of the auxiliaries throughout the state where the school problem is not so vast as in Chicago. A poster display on health problems is now being considered which may be far reaching in its import.

Your chairman is only too happy to receive suggestions for new work that will broaden our activities and help secure the goal for which we strive. She is most willing to cooperate with county and state auxiliaries in putting on a health program as a part of public relations. Our service bureau, the Educational Committee, is ready to assist us at all times with its package library service, articles for newspaper release, radio talks and public health lectures by competent medical men. Treatment is not discussed. Physicians should be the leaders and the authority for health measures in their own communities. Our goal as an auxiliary can be reached because we as auxiliaries have constructive policies. We need the united effort of all doctors' wives to help advance health education. We will be building up an intelligent laity with whom the medical profession can cooperate. "It is in the dew of little things the heart finds its morning and is refreshed." A Happy New Year and a helpful one for all.

WOMAN'S AUXILIARY

1932-33 ANNUAL REPORTS GIVEN AT PEORIA

Mrs. A. H. Brumback, *President*

Cook County. The first meeting of the Council of the Cook County Auxiliary for the season of 1932-33 was held on June 1, 1932, in the Medical and Dental Arts Building, at which the new officers and committees attended in almost their entirety. Another meeting was held on September 7 when a general outline of work was formed and committees appointed by the different chairmen. On October 5 the general work of the Council was transacted and during luncheon Miss Audrey Hayden gave a very fine talk on the prevention of blindness in the new-born. At the afternoon meeting of the Auxiliary, Doctor H. L. Kretschmer gave an illustrated lecture on the "Interpretation of Pyelogram," which was very instructive and interesting.

November 2 a morning session of the Council was held for the regular transaction of business. In the evening a Scientific Crime Detection program was given by the Crime Detection Laboratory Staff at Lincoln Hall, Northwestern University, with Doctor Calvin Goddard as chairman. The attendance numbered between four and five hundred. A pleasant and profitable evening was spent by all.

December 7 a meeting of the Council was held, followed by a card party in the afternoon.

On February 1, 1933, the morning session of the Council was followed by luncheon and a lecture on "Mental Health" by Dr. Alex S. Hershfield, former State Alienist. Following the March 1 Council meeting a program was given by Doctor Frederick B. Moorehead, President of the North Side Branch of the Chicago Medical Society, who gave an illustrated lecture on "Plastic Surgery." Dr. J. F. Jaros gave a lecture on "Health and Personality" at the afternoon program following the Council meeting on April 5.

The Annual Meeting was held on May 24 with the

Council in session during the morning and the afternoon devoted to election of officers for the ensuing year, followed by a musical program, playette and tea for the invited guests.

In addition to the above regular programs there were a number of activities which proved most interesting and beneficial to the Auxiliary. On August 15, 1932, Mrs. Packard, Chairman of Ways and Means Committee conducted a fifty-two mile trip through the underground tunnel railway system which was enjoyed by nineteen members. On March 1, 1933, Doctor Josephine Lohr gave a very descriptive talk on the "Enchanted Island" at the Century of Progress, and on March 25 eighty-two members and friends were conducted by Mrs. Meyer Solomon on a trip through the grounds of A Century of Progress, ending with luncheon at the Old Heidelberg Inn. Past Presidents were guests of the Auxiliary on April 5, each one giving a three minute talk on her hopes and ambitions on assuming office. On April 11, your President gave a radio talk over WGN on the "Old Time Doctor" at the invitation of the Educational Committee of the Illinois State Medical Society.

Mrs. G. B. Dudley, *President*

Coles-Cumberland County. The fifteen paid members of the Auxiliary have held five meetings during the year beginning with January, 1932, when the group met at the U. S. Grant Hotel in Mattoon. Election of officers was held at this time but there was insufficient time for the program previously arranged. In March there was a combination supper and meeting held at the home of Mrs. G. B. Dudley in Charleston with an informal discussion on Communism in our schools and country. The May meeting was held with Mrs. Donovan at Windsor. Articles from magazines pertaining to medical questions and the advertising done by Montgomery Ward's for urine analysis were discussed. The picnic planned for July failed to materialize but meetings were held in September and November at the homes of Mrs. Bigler in Neoga and Mrs. Shaffer at Charleston. The papers furnished by the State Auxiliary were read at these meetings.

Last September we financed five subscriptions to *Hygeia*, sending them to Parent Teacher Associations in the county. The Auxiliary also sent flowers and an expression of sympathy to our late State President, Mrs. T. O. Freeman, upon the death of her husband last October. During the last two years we have only paid $1.00 dues. It takes all of this to pay the State and National dues yet we have had enough in reserve to meet all other expenses. We have voted to have our fiscal year end March 1, in accordance with a suggestion from our State President, Mrs. E. W. Mueller.

Mrs. E. S. Allen, *President*

Douglas County. The Auxiliary has held regular meetings at which the work has been of both social and educational character. Since good fellowship and friendship have been an important part of the organization, emphasis has been placed on social activities. We are now prepared to do more in an educational way, perhaps studying the laws of the country as they relate to health and sanitation. Programs have consisted of book reviews, material prepared by the Program Committee of the State Auxiliary, and discussions of articles published in periodicals. *Hygeia* was placed in the public library. Dr. R. K. Packard of Chicago presented an interesting discussion of "Medical Economics" at the last regular meeting. Social activities have consisted of two dinners followed with bridge at which members of the Douglas County Medical Society were guests. The first was held at the home of Mrs. George H. Fuller at Tuscola and the second at the home of Mrs. R. C. Gillogly at Newman.

The present membership is fifteen, two new members having been accepted during the year. There are only four other women in the county eligible to membership. Dues are $1.50 annually.

Mrs. Imas Rice, *President*

Kane County. There are approximately seventy doctors' wives in the county eligible to membership in the Auxiliary. We have twenty-eight members and hold six meetings a year, four of which are educational and two social in nature. Members of the Kane County Medical Society and the Auxiliary meet for dinner after which the two organizations hold separate sessions. One meeting of the Auxiliary was devoted to a program on the Prevention of Blindness, the speaker being Miss Audrey Campbell of the Illinois Society for the Prevention of Blindness. At Miss Campbell's suggestion and with the consent of the advisory board of the county medical society, letters were sent to our senator asking him to vote favorably on the bill for the prevention of blindness in the new-born and to Governor Horner urging him to sign the bill after its passage.

The Press and Publicity Committee sends reports and announcements of Auxiliary activities to the Aurora and Elgin newspapers which reach the majority of Kane County residents. Sample copies of *Hygeia* were placed in various schools and in the Aurora Y. M. C. A. Auxiliary dues were reduced this year from $2.00 to $1.50 per year. The spirit of good fellowship created through the social contact afforded by the joint meetings of physicians and their wives is much enjoyed.

Mrs. E. G. Beatty, *President*

Livingston County. The Auxiliary was organized December 6, 1932, and has a membership of fourteen. Thirty-one women in the county are eligible to membership. Meetings are held four times a year with an average attendance of ten. The business sessions are preceded by luncheon. Our State President, Mrs. E. W. Mueller, and the President-Elect, Mrs. Solomon Jones, have addressed us.

The Auxiliary has cooperated with other organizations in sponsoring examinations of pre-school children by the family physician as opposed to group examinations. *Hygeia* has been placed in the High School library, books have been donated to the Livingston County Tuberculosis Sanatorium, and magazines have been given to the Woman's Reformatory at Dwight.

We secured Dr. Cyril Hale of Chicago as speaker for the Welfare Department of the Pontiac Woman's Club and for the Chatsworth Woman's Club. All meetings have been reported to the local press and clippings have been sent to the State Chairman of Publicity.

Mrs. W. N. Hamilton, *President*

Marion County. Organized in December, 1932, the Auxiliary has nineteen members. Twenty-four women are eligible to membership. Meetings are held every two months at which the attendance has averaged fifteen members. Emphasis has been placed this year upon getting properly organized and becoming acquainted. The interest of members is good and the attitude of the Marion County Medical Society is friendly and cooperative.

Our State President, Mrs. E. W. Mueller, was present at one meeting and Dr. and Mrs. John R. Neal were guests at an earlier meeting.

Mrs. Gerald M. Cline, *President*

McLean County. Last year we started with only five members. By meeting at the different homes, having supper and a social evening, followed by book reviews and items read from the ILLINOIS MEDICAL JOURNAL, and by each member contributing twenty-five cents, our membership and bank account have been increased. We now have twenty-five members. We have done some philanthropic work and see prospects for a much larger membership. Meetings are held the second Tuesday in the month.

Mrs. W. D. Chapman, *President*

Rock Island County. Meetings have been held once a month and have shown an increase in attendance during the past year. The Auxiliary meets at the same place and time as the County Medical Society. The September meeting was a dinner meeting held jointly with the County Medical Society, the program being arranged by a committee representing both organizations. The President of the Auxiliary was invited to give a short talk on the work of the State Auxiliary and told something of the history and growth of the National organization. A travelogue entitled "Maya Medicine" was given by Dr. and Mrs. A. E. Williams, members of the local groups who had made an extensive tour of Central America during the summer. Musical numbers and readings completed an enjoyable evening.

The Auxiliary was invited by the County Medical Society to participate in the placing of a marker for the grave of Dr. John Gale, the first surgeon appointed to serve at the Rock Island Arsenal Post, who is buried on the Island. A fitting program featured talks by Mr. John Hauberg, an authority in Illinois history, and Dr. Irving S. Cutter, dean of Northwestern University Medical School and permanent historian of the Illinois State Medical Society.

We have an efficient program committee. Much of the program material furnished by the state program committee has been used. One of our meetings was given over to the report of the Committee on the Costs of Medical Care. Another meeting featured a splendid book review of "The Magnificent Obsession" by Lloyd Douglas. At the May meeting we listened with the County Medical Society to Colonel Goddard of Northwestern University.

Our legislative activities have been confined to H. B. 161 and we found our senator and representatives courteous and favorable to this particular legislation. Several of our members serve on executive boards of lay organizations. We feel that through these members we can keep in touch with any proposed legislation or public health activities being sponsored by lay groups. Speakers for health programs of lay organizations have been secured by auxiliary members from the Speakers' Bureau of the Illinois State Medical Society. *Hygeia* has been placed in the four nurses' training schools of the county. The *Hygeia* chairman made a survey of all libraries in the county as a result of which three new subscribers were added.

Our membership is not as large as we would wish, for it includes only about one-third of those eligible in the county. However, we feel that the auxiliary has promoted a better feeling among doctors' families, increased attendance at County Society meetings, and made us all more conscious of the economic problems that confront the medical profession.

Mrs. Elmer E. Hagler, *President*

Sangamon County. The forty-two members of the Auxiliary have held seven meetings, regularly on the second Friday of each month. The attendance has been good and all have expressed satisfaction with the year's activities and can be counted upon to carry on. The greatest difficulty the organization has to meet is making a place among the other organized groups to which our women belong. Our Auxiliary, therefore, holds most interest for the younger women who are not affiliated with many of the older organizations. For that reason, emphasis has been placed on the social phase this year. Meetings have been held in the homes of members with music as a feature of the program and closing with a social hour and afternoon tea. We have had, however, addresses by outstanding authorities on subjects pertaining to the medical profession. In March the Auxiliary took an active part in urging the passage of the bill for the prevention of blindness in infants (Bill 161), both by petition to the Senate and by going in a body to hear the debate. In December the members accepted the invitation of the Sisters of St. John's Hospital to be hostesses at a Silver Tea for the benefit of the graduates of the school for nurses.

Our work has been handicapped by the closing of the bank in which our funds are deposited. However, we gave a generous contribution to the community fund for associated charities. Best of all, we have come to know each other better, to form ties of friendship, and to realize the value of cooperation in furthering the welfare of the community and of the medical profession.

Mrs. J. W. Rendleman, *President*

St. Clair County. The membership of the Auxiliary is fifty, two new members having recently been accepted. Our meetings are held the first Thursday of

each month, October to June inclusive, at the same time and place as the meetings of the St. Clair County Medical Society. The two organizations hold their meetings in different rooms at St. Mary's Hospital. At the close of our business session we are joined by the physicians and interns for refreshments and a social hour. We have had three open meetings with health educational programs to which various civic groups and clubs were invited, refreshments being served also at these meetings. We found that the serving of light refreshments aided in the promotion of good fellowship. Miss Audrey Hayden, Secretary of the Illinois Society for the Prevention of Blindness, addressed one of our meetings when Parent-Teacher and club groups were invited to be present. We took an active interest in the passage of the bill for the prevention of blindness in infants which was later signed by the Governor.

We have had several book reviews, readings of papers sent to us by the Program Committee of the State Auxiliary, and at each meeting have had a resume of *Hygeia*. Good music has been furnished at all meetings. We bought tuberculosis seals and investigated a report of a physician's wife supposed to be in destitute circumstances. All meetings are reported in our local bulletin as well as in the daily press. Our relationship with the County Medical Society is one of cooperation and cordiality; attendance at meetings of the Medical Society has increased; prejudice against the formation of an Auxiliary has been overcome; and a feeling of good fellowship has been fostered.

Mrs. Benson M. Jewell, *President*

Vermilion County. We feel that the year 1932-33 has been successful for the Auxiliary. We have a paid membership of fifty as compared with fifty-six of the previous year. This represents a loss of ten members, some of whom had been unable to attend a meeting during their membership, and a gain of four new members. A new feature introduced at our meetings by the program chairman, Mrs. E. G. McGavran, was the indoor picnic. Two meetings of this type were held, followed by a business meeting and an entertaining program or games. Other meetings of the year were dinner meetings followed by educational programs. Speakers heard during the year were Dr. George B. Lake, Editor of *Clinical Medicine and Surgery,* whose subject was "Mental Hygiene"; Dr. A. R. Brandenberger, County Physician, who spoke of the charity work in the county; Miss Hahn, who told of the work of the County Dispensary; Dr. Florence Gebhart of the University of Illinois whose subject was "Sex Education from Infancy to Maturity"; and Miss Audrey Hayden, Secretary of the Illinois Society for the Prevention of Blindness, who explained House Bill 161. Among members who contributed toward the programs were Mrs. O. J. Michael who read a paper supplied by the State Program Committee on the subject "Romance of Anesthesia," and Mrs. O. H. Crist who reviewed "Reforging America" by Stoddard.

The *Hygeia* Committee, Mrs. Wheatley, chairman, through correspondence with some one in every village and town in the county, was able to place ten subscriptions to the magazine in libraries and school reading rooms. Mrs. F. M. Mason, Legislative Chairman, aroused interest in her field. At the request of the County Medical Society we distributed and explained to voters the use of sample ballots for retaining a fund raised by taxation for a tuberculosis hospital. Our Constitution was amended to close our fiscal year March 1 instead of December 1. This conforms to the Constitution of the Auxiliary to the Illinois State Medical Society.

Mrs. L. J. Wilhelmi, *President*

Will-Grundy County. During this past year, the Will-Grundy County Auxiliary to the Medical Society has concentrated its energies upon an educational program. This was developed along two lines. First, at the invitation of our husbands, we met with them for a luncheon and program each month. The doctors of these two counties hold weekly meetings, and so felt that they could devote one meeting each month to some of the more general and less technical types of medical lectures. Thus we shared with them many splendid programs such as Dr. Lena K. Sadler's discussion of "Medical Leadership in Lay Groups," and Dr. R. K. Packard's presentation of the medical man's ideas on the "High Cost of Medical Care."

The other phase of our activities was to accustom lay groups, such as the various Parent-Teacher Associations, to come to us for their medical programs. This year we furnished four such programs. One was a talk on "Child Hygiene" by one of our pediatricians. The other three were on the "Prevention of Blindness," and especially was stressed the prevention of blindness in the new-born.

EDUCATIONAL COMMITTEE

November and December, 1933

Jean McArthur, Secretary

SPEAKERS' BUREAU:

75—Speaking appointments were scheduled by the Committee before the following organizations: Women's Auxiliaries, Women's Clubs, Century of Progress, Junior Colleges, Y. M. C. A., Nurses, Parent Teacher Associations, High Schools, Teachers' College, American Legion, Parent Education Groups, Universities, Business and Professional Women's Clubs, Ministerial Association, Republican Club, Kiwanis, Young Mothers' Clubs, Rotary, Pre-Medical Pre-Dental Clubs.

The following doctors assisted in these programs: W. A. Evans, F. P. Hammond, Clifford Grulee, H. C. Moss, C. J. Barborka, O. B. Nugent, W. D. McNally, D. O. Thompson, Sanford Gifford, R. C. Gamble, Harry S. Gradle, R. K. Packard, E. S. Hall, Kenneth K. Jones, Florence P. Gebhart, John F. Carey, George M. Lucas, G. K. Fenn, A. F. Kaeser, Aaron Arkin, Charles H. Miller, W. W. Bauer, Homer Humiston, F. E. Senear, Roger Hubbard, W. L. Crawford, James

T. Gregory, J. Howard Beard, Carroll Birch, Leon Unger, H. W. Elghammer, D. D. Monroe, Mabel Howe Otis, W. A. Newman Dorland, Esther Smucker, E. L. Cornell, Harry R. Hoffman, W. C. Danforth, Bertha VanHoosen, J. Roscoe Harry, Sumner N. Miller, K. M. Nelson, R. H. McPherron, Bert I. Beverly, A. C. Ivy, L. A. Crandall, J. H. Roth, M. L. Blatt, G. C. Otrich, Frank B. Kirby.

PRESS SERVICE:

1,221—Releases to Illinois Newspapers:

726—Regular service.

42—Monthly service.

61—Releases on Scarlet Fever to newspapers of Adams, Coles, Champaign, Fayette, Kankakee, McLean, Peoria, Tazewell counties.

36—Releases on Chickenpox to newspapers of Clark, DeKalb, Logan, Stephenson, Williamson counties, and to the cities Aurora, Berwyn, Cicero, Lincoln and Rock Island.

5—Releases on Pneumonia to the cities, Streator, Rock Island, East St. Louis.

2—Releases on Pasteurized Milk to Mattoon.

59—Releases announcing meeting DeWitt County Medical Society.

90—Releases re LaSalle County Medical Society Meeting.

54—Releases re Perry County Medical Society Meeting.

53—Releases re meeting Winnebago County Medical Society.

33—Announcements of Tuberculosis Clinic sponsored by the Jackson County Medical Society.

42—Notices of meetings of Branches of the Chicago Medical Society.

3—Notices to Chamber of Commerce of Chicago Medical Society.

15—Releases about meetings of Chicago Medical Society.

12—Educational articles were written and approved on:

"Saving Ourselves from Colds."
Common Foot Disorders.
Oysters Are in Season.
Thyroid Dysfunction.
Cancer of the Skin.
American Dietary Habits.
Scoliosis.
Rational Use of the X-Ray.
The Kidneys.
Cancer of the Mouth.
Obesity.
An Ancient Scourge and a Present Evil.

MISCELLANEOUS SERVICE:

245—Card notices sent to physicians announcing Bureau County Medical Society November 7th meeting.

372—Letters sent to physicians re LaSalle County Medical Society November 23rd meeting.

219—Invitations sent for Bureau County Medical Society, December 1.

187—Notices sent to physicians announcing December 7th meeting of Perry County Medical Society.

54—Letters sent to physicians announcing December 28th meeting of Hamilton-Jefferson County Medical Society.

159—Notices sent to physicians re January 4th meeting Perry County Medical Society.

335—Cards mimeographed for Woman's Auxiliary, Chicago Medical Society, announcing Annual Card Party, December 6.

270—Announcements mimeographed for January 3rd meeting of the Woman's Auxiliary, Chicago Medical Society.

148—Letters mimeographed for Organization Chairman of the Woman's Auxiliary of the Illinois State Medical Society.

247—Announcements mimeographed and sent to women's clubs announcing a health program given by Illinois Federation of Women's Clubs.

53—Announcements mimeographed and sent to club women announcing tour of Laboratories of medical school.

95—Letters sent to secretaries of county medical societies announcing services of the Educational and Scientific Service Committees.

25—Package libraries compiled and sent to physicians.

8—Moving picture films on health subjects secured for groups.

Secretary attended meetings of the Illinois Society for Prevention of Blindness, Health Officers Conference at Springfield, Medical Commission of American Legion meeting at Bloomington, Illinois Federation of Women's Clubs in Chicago, Child Hygiene Advisory Committee meeting Chicago.

RADIO:

40—Radio programs given over stations WGN, WAAF, WJJD.

Charles N. Pease—Scoliosis.
Emil Hauser—Common Foot Disorders.
C. F. Yerger—The Eye and General Disease.
N. J. Heckel—Kidney Trouble.
Tell Nelson—Bronchial Asthma.
Harry A. Singer—Cancer of the Stomach.
A. S. Hershfield—Mental Habits.
M. Herbert Barker—Nephritis.
C. J. Barborka—American Dietary Habits.
Paul H. Wezeman—Tuberculosis.
J. P. Greenhill—Superstitions and Misconceptions About Childbirth.
M. M. Kunde—Endocrine Influence on the Body.
H. E. Kimble—Rational Use of the X-Ray.
E. C. Olson—Obesity.
Donald C. Keyes—Crippled Children and Their Care.
G. Henry Mundt—Defective Vision in Children.
Walter R. Fallon—Lobar Pneumonia.
M. T. Strikol—Injuries in Auto Accidents.
H. K. Scatliff—Good Parents and Bad Children.
Joseph L. Meyer—False Modesty and False Pride.

Theodore Shapira—Why the Eyes Water.
Max S. Wien—Acne.
Julius Brams—Cancer is Curable.
Peter A. Nelson—Cancer of the Mouth.
A. A. Herschfield—Dementia Praecox.
Wilbur E. Keesey—Amebic Dysentery.
John A. Cousins—Headaches.
Cyril Hale—What is Insanity?
John A. Ritze—Appendicitis.
H. F. Mars—The Diseased Gall Bladder.
E. E. Dillon—Eyes in Adult Life.
C. N. Pease—Congenital Deformities.
G. L. Kaufman—The Healthy Child.
G. Henry Mundt—Eye and Ear Affections in Childhood.
R. O. Ritter—The Crippled Child.
Philip Lewin—Infantile Paralysis.
R. R. Ferguson—Building Health in the Child.
W. F. Moncrieff—Convergent Squint in Children.
C. J. Drueck—Some Troubles in Childhood.

SCIENTIFIC SERVICE COMMITTEE:

25—Speakers scheduled to address county medical societies:

Englewood Hospital—Aaron Arkin—Diseases of the Lung.
Woodlawn Hospital—Aaron Arkin—Diseases of the Liver.
Will-Grundy County—John R. Neal—Medical Legislation.
Will-Grundy County—Solomon Strouse—Obesity.
Will-Grundy County—N. S. Davis III—Hypertension.
Will-Grundy County—George W. Hall—
Will-Grundy County—Benjamin Goldberg—Tuberculosis.
Will-Grundy County—David S. Hillis—Obstetrics.
Will-Grundy County—M. L. Blatt—Convulsions in Children.
Will-Grundy County—Clayton J. Lundy—Film and Lecture on Electrocardiography Diagnosis.
Southern Illinois Medical Association—Philip Kreuscher—Why Organized Medicine.
Clinton County, Iowa—Paul Starr—Treatment of Pernicious Anemia.
Peoria City—N. S. Davis III—Hypertension-Coronary Disease.
Bureau County—Charles M. McKenna—"Diagnosis and Treatment of Diseases of the Kidney."
South Bend, Indiana—S. M. Feinberg—Allergy of the Respiratory Tract in Relation to Respiratory Infections.
Tri County Medical Association—H. M. Camp—Illinois Program for the Care of the Indigent.
Paris Hospital Staff—James H. Hutton—Clinical Application of Recent Advances in Pituitary Studies.
Jackson County—Lee Dorsett of St. Louis—The Conservative Treatment of Eclampsia.
Jackson County—Hugo Deuss—Clinic for Tubercular Patients and Lecture on Tuberculosis.
Scott County, Iowa—James G. Carr—"Cardio Vascular Diseases and Cardiac Pain."
Rock Island—R. H. Jaffe—The Pathology of Nephritis.
Lakeview Hospital—Aaron Arkin—Organic Heart Disease.
Calumet Branch, Chicago—James G. Carr—Cardio-Vascular Disease.
Decatur and Macon County—Ford K. Hick—The Use of Oxygen in the Treatment of Heart Disease.
Monroe County—Mather Pfeiffenberger—Unusual Surgical Cases.

Doctor Frank J. Jirka and members of his staff presented programs before Madison, Coles-Cumberland, and Kankakee County Medical Societies.

LABORATORY DISCOVERY IN TUBERCULOSIS

Tuberculosis research is directed hopefully to a new avenue of experimentation, developed by Dr. Stephen J. Maher, of New Haven.

The discovery was made that a pure culture of standard types of virulent tubercle bacilli became transformed to pure colonies of cocci after a period of growth immersed in litmus milk.

The litmus showed that these cocci had emitted acid to the media. This acid byproduct is credited with the power to destroy the bacilli, and this experiment repeatedly demonstrated the complete destruction of pure tubercle bacillus cultures following the development of cocci. The laboratories of three state sanatoria were able to repeat Dr. Maher's technic with entire agreement.

It is apparent that excellent possibilities may be inherent in the process discovered in these test tubes. With adaptation it may be the scheme whereby the human body can be empowered to entirely destroy any such tubercle germs within its organs.

With thought to extend to the laboratories of the world the advantage of his discovery Dr. Maher recently described the test methods and made it clear he wishes all to feel free to use the data in a possible development of application of the method in the treatment of tuberculosis in mankind.—*School Physicians' Bulletin.*

THOUGHTLESS

Old Doc McTavis was taking a well earned vacation. His son just graduating from medical school taking over his father's practice.

"Dad, I made some marvelous cures while you were away," the son boasted, greeting his father on his return. "I even cured Mrs. MacGregor's stomach trouble after you had treated her for four years."

"What!" exclaimed the old doctor, "old Mrs. MacGregor? I'll have you know son, it was her stomach that put you through college."

Original Articles

EMBRYONAL ADENOCARCINOMA OF THE KIDNEY IN CHILDHOOD*

H. T. MOSTROM, M. D.,
and
J. C. WEST, M. D.
BATAVIA, ILLINOIS

Pure epithelial tumors in early childhood are exceedingly rare; much more so than are the adenomyosarcomas and the other variations found in the mixed tumors of the kidney and with which the name of Wilms has become closely identified. In either instance, however, we are dealing with a congenital tumor and all of them may be grouped under the general term of embryomata.

A review of the literature yields very little of value in either description or pathogenesis of embryonal adenocarcinoma of the kidney. In 1897 Walker collected a series of 145 cases of kidney tumor in children and reviewed the literature extensively up to that time. All of these tumors were listed as either sarcoma or mixed tumors and no mention is made of carcinoma except to say, "it is questionable if the latter ever occurs in very young children." This idea is still held by some writers on this subject. In 1920 Porter and Carter in a series of 11 cases of tumor of the kidney in children lists among other types 3 cases of carcinoma but offers no description or further comment. A year later, Hyman in a series of 40 cases, lists 8 mixed tumors but does not mention the type of tumor under consideration. In 1922, Mixter reports 27 cases, 23 of them coming to operation. In the latter number were 17 embryomata, all mixed tumors and no epithelial growths. Wollstein, in 1928, presents 18 tumors as a basis of study of renal neoplasms in young children and of this number 17 belong to the mixed tumor group while the remaining one is a spindle cell sarcoma. Then Mixter, again in a later report, 1932, records 41 renal tumors, 30 of which are mixed tumors, and 7 bear various diagnoses, including one tumor of epithelial origin.

Collectively, the above partial enumeration of kidney tumors represents a rather sizeable number without much mention of adenocarcinoma as being associated with neoplasms of this region in children. Then, when we examine the statistics of Hinman and Kutzman we find that the incidence of these reported renal tumors in children is about 1 in 2,500 cases we get some idea of the extreme rarity of adenocarcinoma as a type of renal malignancy in childhood. In sugical cases only, Mixter gives the incidence as one in 535.

The number of instances have been few indeed where we have found adenocarcinoma, embryonal or otherwise, specifically given as the histologic tumor structure. Ewing recognizes this type of tumor and states that compared with mixed tumors of the kidney pure epithelial growths are rare in children. In an analysis of 170 kidney tumors Albarran found only 17 of the pure epithelial variety; two being adenocarcinoma, seven carcinoma, and the remaining eight being equally divided between adenomas and adrenal tumors. In addition to these we have been able to find only two cases reported in which the histological examination describes the growth as embryonal adenocarcinoma. Gardiner reports one of them and speaks of it as "a rare variety of renal carcinoma." Lightwood reports the other in a child nearly six years of age. Neither of them go much beyond the mere reporting of the case and neither of them state the subsequent developments as to life or death. Schultz mentions the finding of a carcinoma in the kidney; that it had no characteristics of a mixed tumor and that it probably sprang from a teratoid growth in the kidney. In addition to these there are undoubtedly a few more reported, particularly in the foreign literature.

When we note that these renal tumors of epithelial genesis have for the most part been reported in the last few years, the most recent ones in 1932, it suggests at least the strong probability that some of these tumors have previously been classified in the literature under the name of congenital sarcoma.

We now wish to report a case of embryonal adenocarcinoma of the kidney.

M. M., female, white, aged 2 yrs. and 10 mos., presented a tumor mass in the abdomen as the chief and only complaint. She was admitted to the Community

*Read before the Section on Medicine of the Illinois State Medical Society, Peoria, May 17, 1933.

Hospital, Geneva, Ill., Jan. 3, 1933, on our service and discharged Jan. 17, 1933, in good condition.

History of previous illnesses negative except for whooping cough and minor complaints. Early last October the largeness of the abdomen attracted attention and this led to the discovery of a mass in the right side. This mass never caused her any pain or inconvenience and during the three months intervening between the discovery of the mass and our examination it is stated that the increase in size had been very slight.

Physical examination revealed a rather well nourished child, weight 33 pounds, color pale, and a prominent abdomen containing on the right side a visible mass occupying most of the area between the costal arch and the ileum and extending mesially to within a few cm. of the midline. This mass was freely movable, not tender or painful, ovoid in shape and perfectly smooth in contour and yielded a sense of fluctuation on pressure suggestive of a large, single cyst. 15 cc. of Skiodan was injected intravenously and an

Fig. 1. Section of tumor showing also remnant of kidney.

x-ray examination made. This showed the pelvis of the kidney pushed upward and inward by a dense mass with a smooth oval outline and intimately associated with the kidney. Urinary findings variable: albumin at times, occasional granular cast, trace of sugar noted once, no blood or pus cells. Specific gravity low: 1005 to 1010. Blood count: red blood cells 3,200,000; white blood cells 8,000 with 40% small lymphocytes and 60% polymorphonuclear neutrophiles. Blood chemistry: urea nitrogen 28.02; creatinin 1.5.

Pre-operative diagnosis: Tumor of the kidney; probably sarcoma, possibly a large cyst.

Operation. The kidney was removed via the transperitoneal route for operative facility since the tumor and kidney substance was about the size of a small grapefruit. There were no enlarged glands or other evidence of metastases within the limits of the operative area. Examination of the left kidney showed it to be of normal size, shape and consistency. Stab drain inserted in the flank and abdominal wound closed.

Post operative diagnosis: Embryonal Adenocarcinoma of Kidney.

Description of specimen. This consisted of a large tumor of the kidney 9 cm. in diameter and together with kidney remnants weighed 600 grams. The tumor itself was perfectly smooth in contour without nodulations of any kind on the surface, ovoid in shape, gray in color, and firmly encased in a dense, tough, fibrous capsule 1 to 2 mm. thick. The tension of the mass was such as to give it a sense or feel of fluctuation. In the mid-portion of the kidney the parenchyma had entirely disappeared and in these areas the capsule of the tumor had fused with the capsule of the kidney. In other areas the renal tissue was so thinned from pres-

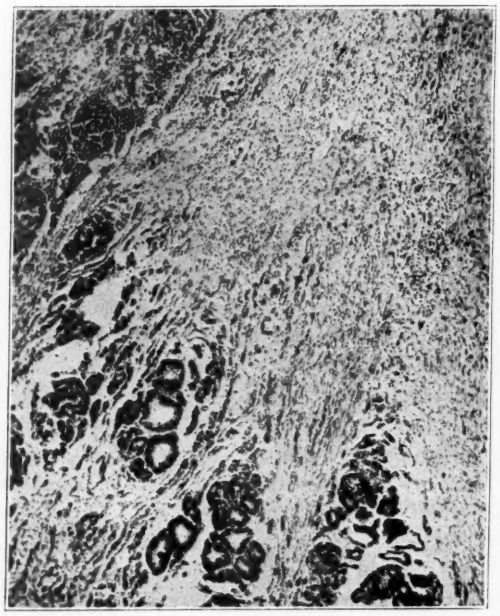

Fig. 2. Tumor tubules and cells infiltrating fibrous capsule of tumor (X70).

sure that it appeared as only a slight blush of color against the gray of the tumor capsule. At the poles the kidney tissue was not yet compressed and here we found normal functioning kidney structure. The kidney pelvis was in contact with the upper and inner surface of the tumor and the calyces were greatly dilated but not invaded by the growth. On cutting the capsule the tumor tissue rolled out over the cut edge and indicated the presence of considerable pressure. On completing the section the cut surface of the tumor was homogeneous, yellowish gray in color, with trabeculae of fine fibrous tissue going through it in an irregular manner.

Microscopic sections show a tumor growth consisting of rather regular glandular tubules lined with tall columnar epithelium appearing in single, double, and multiple layers. Many tubules show a fair sized lumen. There are other areas where the regular tubular appearance is lost and the tumor cells form solid, undifferentiated aggregations in which are narrow blood channels. Separating the solid masses and glandular tubules are thin strands of fibrous tissue with splindle

celled nuclei. There averages one to two mitotic figures per high power field. There are, however, fields in which no mitosis is observed.

The outer capsule is thick and fibrous while the inner side tends to be cellular and is invaded by vascular spaces and by tumor cell aggregations. There is also some calcareous degeneration in the capsule.

The kidney substance appears normal.

The little patient was carefully examined on May 9 and found to be clinically well. Urinanalysis showed no albumin, no blood, and only an occasional pus cell. Blood examination: 4,700,000 red cells, an increase of 1,500,000 since operation; 11,000 white corpuscles. She weighs 35 pounds and is apparently as normal in every particular as any child of her age.

Pathogenesis. It is not our purpose in this paper to enter into a lengthy discussion regarding the various theories advanced to attempt explanation of the life cycle of these interesting

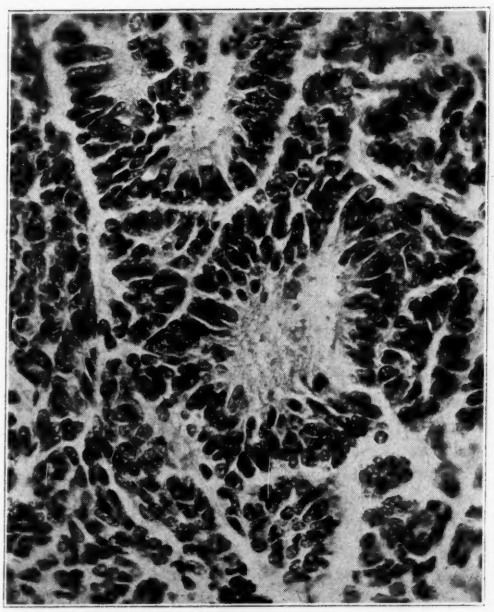

Fig. 3. Tubules showing mitosis in some of the cells together with undifferentiated stroma tissue

tumors of the kidney. However, in order to assume a reasonable deduction as to the probable origin of the pure epithelial variety of embryoma it is best to consider first the probable time element in the formation of mixed tumors. Wilms, whose theory of the formation of mixed tumors is probably the most satisfactory, places the period of cellular dislocation very early in the life of the embryo and before nephrotome, sclerotome, or mytome have developed from the mesoderm. In this way he accounts for the presence of the several unrelated tissues as epithelial tissue, smooth and striated muscle fibres, fibrous tissue, cartilage, etc., within the confines of a single, encapsulated tumor structure.

In the early life of the embryo tissue differentiation for specialized function occurs rapidly. A little later than the period at which it is believed by Wilms that mixed tumors originate there is set aside in close relationship to the pelvis of the kidney a compact area of mesoblast which will be intimately concerned in the production of the convoluted kidney tubules and to this mass has been given the name renal blastema. If development has been orderly up to this point it would seem quite impossible that a mixed tumor could develop from the renal blastema; and at the same time should some of these cells fail to continue a normal course and retain the cell age of that particular time it would seem quite probable that nothing but an embryonal adenocarcinoma, or at least an adenoma, could be the result if a tumor is formed at all. It follows, then, that the earlier a tumor originates the more likelihood will there be of the renal tumor containing a multiplicity of tissues; while on the other hand, the more differentiation has proceeded the simpler will be the cellular character of the tumor. The genesis, therefore, of an embryonal adenocarcinoma such as is being reported, is likely of a later period than the time of origin of adenosarcoma and the other mixed neoplasms. This, we believe, should be considered in estimating prognosis.

Prognosis. Little can be said as to prognosis in this particular type of tumor. Much has been said in this regard of mixed tumors of the kidney. In Kretchmer's series of 17 mixed tumors 16 are dead. In Mixter's collection of 14 nephrectomized patients 13 are dead and one alive after 3½ years. In Walker's series of 145 cases only 4 are alive after 3 years. Other series of collected cases show about the same proportions. What the figures would be in a series of pure epithelial growths it is impossible to say since so far as we can ascertain no such series exists. The cause of death in practically all operative cases of mixed tumors is recurrence of the growth. The cases not operated on, of course, all die. Albarran and Imbert in a series of 42

cases found recurrences as follows: 29 within 6 months; another 10 in the next 6 months; and the remainder scattered along from 3½ to 5 years. Most of the deaths in Kretchmer's series occurred within 6 to 8 months. Eight of nine surviving operation in Mixter's collection died in 4 months to 1½ years. In Hyman's list of 8 cases 4 died within 6 months of local recurrence. It is apparent, then, that if survival is extended to six months and without evidence of recurrence the outlook becomes more encouraging.

The appalling mortality of mixed tumors may be due to the time of their origin. As stated above they must begin very early and before the tissues in which they originate have undergone much differentiation; it is not unreasonable, therefore, to assume that multiple implantations of points of origin may occur in that early period. Some mixed tumors are bilateral when first seen and others become so later and what may appear to be a metastatic growth may in reality be the development of another original tumor. The embryonal adenocarcinoma, on the contrary, develops from a tissue already well differentiated and this may have a bearing on the prognosis of a tumor of this type. There should be more probability of the growth being a single expression of an embryonic disturbance than in the mixed type and it lacks the nature of a sarcoma in its metastatic tendencies.

Another factor in prognosis, important in our minds at least, is the integrity of the capsule. Nodulations and irregularities indicate a breaking down of the capsule and the extrusion of malignant material through it. This facilitates local recurrence and metastatic deposits and is probably the greatest causative factor in the high mortality of all types of embryonal tumors of the kidney. Whether this breaking down of the capsule is more readily accomplished in the mixed tumors than in the adenocarcinomata is difficult to say at this time; but should such be the case then it will be of the greatest importance from the standpoint of prognosis that embryonal adenocarcinomas be not indiscriminately classed with all the various varieties of mixed tumors as is the tendency today.

We wish, in closing, to express our indebtedness to Dr. J. J. Moore for the histological description of the tumor and to Dr. H. L. Kretschmer for his verification of the same and our thanks to both of them for their kindly interest.

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DISCUSSION

DR. J. F. CAREY, Joliet: The embryonic tumors of infancy and childhood are most confusing as regards an exact classification. The most important factor in this jumble is that in the same tumor one finds totally different types of cells and totally different cell arrangements. These growths have masqueraded through the literature under diverse groupings arising from observers studying only one portion of the tumor. It is quite common in embryonic growths to see areas of round cell sarcoma, adenosarcoma fibromyoma, spindle-cell carcinoma and teratomaous areas.

However, as Dr. Mostrom has pointed out, compared to mixed tumors pure epithelial growths are rare in children or at least in literature attention is seldom given to the recognition of carcinoma in infants and many cases have undoubtedly been included under the name of congenital sarcoma. Neverthless, inasmuch as all tumors of the kidney, which are recognized as such, are potentially malignant and they should be treated by nephrectomy. Since the physician cannot make a pre-operative diagnosis of the histo-pathology, he must concern himself with the diagnosis of a renal neoplasm and as soon as that is done nephrectomy should be carried out.

Highly important is a thorough physical examination especially in those cases of general malaise and failure to develop normally. If one keeps the possibility in mind that kidney tumors do occur in children, the diagnosis will not be difficult. The position, size and surface of the tumor is quite characteristic and usually easily palpitated through the thin abdominal wall. This is evidenced from the fact that so many times the child

is brought to the physician because the mother has felt the mass in the usual care of the child. The lack of urinary symptoms, especially hematuria, is misleading though microscopically pus and blood may be observed. Do not hesitate to give light anesthesia to a fractious child if there is any question as to a mass being present.

Good results and a lowered mortality is bound to come if these cases are diagnosed early since the tumor is slow to metastasize though it grows rapidly and large growths makes operative procedure very hazardous and disappointing. Interesting is the fact that they are usually unilateral and may grow to a very large size without metastasis or breaking through the capsule of the tumor.

Dr. J. J. Moore, Chicago: This is one of the rarest tumors of the kidney that has been reported. As to prognosis I feel that the patient, unless there is a similar tumor in the other kidney, will get along very nicely. The tumor was encapsulated and, although malignant, as far as could be determined had not penetrated entirely through the capsule.

Dr. H. T. Mostrom, Batavia (in closing): In order to conserve time I omitted mention of operative procedure. I wish to say, however, that all structures within the limits of the operative exposure were carefully examined and no evidence of extention or metastasis was found. The other kidney was found to be normal in every way. We feel that we have every reason to believe that the patient will remain well. The tumor was discovered early in October and it is now about eight months since discovery and over four months since operation.

Addenda: May we add that December of 1933 finds the patient still in excellent health and without evidence of recurrence.

THE FUTURE OF MEDICINE*

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In common with the future of all national professions and industries, the future of medicine depends upon the degree to which our national conscience rouses to fight the imminent menace of socialistic usurpation.

Though scientific medicine stands aghast and stricken as the first victim of slaughtering socialistic and criminally communistic theorists and propagandists, the fate of medicine is bound to be the common fate of all.

Industry will be next. And no matter with what indifference the somnolent citizen may have regarded the struggles of scientific medicine to save itself, and by saving itself save civilization from devastation and destruction, when industry in its every variation feels the grip of communism, the day will have been lost irretrievably. Unless before the dawning of that day of downfall, industry will pause and ponder and take a leaf out of medicine's book.

For while to many doctors, in its fight against communism and chaos, the medical profession seems to have been merely pulling itself up by its bootstraps, this is not so.

Since 1907 medical men of vision aroused by abuses of medical charity in the first place, have seen the handwriting on the wall and cried aloud its warnings. Prophets in the ranks have preached continuously against communism cloaked as pseudo charity. As a result medicine has at last commenced to diagnose its own case and to prescribe a cure.

Heaven speed the day, when industry, ceasing to swallow socialist pap and gagging on chocolate coated communism, gathers itself together and summarily cleans house. This will mean retention of work and workmen but a grand discard of all of these "workmen's welfare" schemes that are only socialistic and paternalistic passing of the buck from the individual to industry at large.

You may not even dream of what medicine has discovered. Through paternalistic so-called "health and welfare" schemes, that would have destroyed scientific medicine completely by this time, if the doctors had not roused and commenced their bitter fight against state medicine, socialism, communism, and all the wild hordes that follow in the train of these misguided doctrinaires, through such schemes I repeat socialism planned to be carried into the very heart of the American industrial world literally on the backs of the medical profession. The universal saddle of course was to have been charity—so-called.

From the time, when in the name of common humanity, the small town employer first sent his own wife to play the midwife in the home of his humblest employe, a chain has been in the weaving that long since outgrew the silken charms of human friendliness. In its place have come fetters, spiked and thorny, that are aimed to drag into complete inefficiency the entire modern structure of comparatively sane existence.

Without tracing tediously intermittent procedures and realizing that professions and in-

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dustries are after all brothers under the skin, let us glance at the conditions surrounding medicine today. These conditions, unless lifted, will destroy the efficiency of medicine as the profession itself admits. And with medicine the complete captive of communism, think not that all other industry, all other professions, all other institutions of civilization will know delay in succumbing to socialistic puerility and malice.

You hear doctors protesting against "lay control of medicine." Do you know what that means? When a doctor speaks of lay control he means that persons other than men of medicine are running the medical profession and dictating the whys and the wherefores of this medical service.

To bring this home more clearly it is just as if a man who was a master baker, and who knew all about the temperatures of ovens, the consistencies of batters and doughs and the quantitative ratio of flour, yeast, sugar and shortening, should walk into his shop some morning, and find there a tailor, who had never mixed a biscuit or greased a pan, setting down the law as to how that baking should be done. And with the law backing up the tailor.

This is just exactly what lay control of medicine does to the medical profession. As I said before, since 1907 prophets in the profession, of which one of the most humble is myself have been out with ropes and axes to incapacitate this blundering interfering lay control. That at times it has been well-meaning enough in its way has not at all mitigated its menace. Menace without malice is menace just the same.

To show you how this lay control of medicine is closely akin to socialistic invasions of industry, take a brief glimpse at its workings.

One of the pet instruments of the would-be lay controllers of medicine is the philanthropy, misdirected and unwise of the endowed foundations and of corporations practicing medicine coupled with the politically inspired, professionally despised idea of compulsory health insurance, state medicine and increased taxation.

In far too many instances these endowed foundations are the left-handed offspring of well-meaning, wealthy, self-made captains of industry. In the desire to be fraternal to the rank and file from which by hard work, good judgment and self denial, they themselves have risen, these founders of foundations attempt to exercise paternal generosity to all the people. The idea is a fine one for the philanthropist. But when the idea in practice works so as to depreciate the fine sense of self-reliance and self-responsibility that has built up a nation of kings from a nation of paupers—not to mince words as to our earliest settlers—then the idea is vicious. Further along in the line, when the idea of the founder of foundations works so as to take from any man his inalienable right to follow his trade or his profession, or to engage in business—takes away from him in fact that very opportunity by which the founder of foundations gained the wealth that enables him to do this very vicious act—then the idea is criminally pervert.

And like all vice and crime and perversion, once unleashed, it cannot be controlled. The endowed foundation, that by its poorly aimed unscientific help to humanity makes that humanity a mere bulk of indolence, resting upon a dole, and takes from self supporting men opportunity to support themselves is at once a lethal contact to democracy and to decency.

These endowed foundations with their centers, their clinics, their dispensaries, and over authoritative nurse have been a large factor in pauperizing the minds if not the bodies of far too large a proportion of our population. So keen has become the competition between foundations that now instead of caring for the pauper class alone, or the merely temporarily unfortunate, the scope of the foundations to give away medical charity runs to the point where in one certain city alone any man whose income was less than $5,000 per annum was assured of practically free obstetrical care for his wife, until the wise headed business men back of this unfortunate idea were enlightened by medical men as to what they were doing. They admitted it would be pretty bad for the country and for the citizenry at large if every man whose income was under $5,000 per annum could be assured of getting food, clothes, shelter, car fare, telephone service, dentistry, drugs, etc. for practically nothing. However the idea is still groping to shoot up roots.

Until the endowed foundationer got busy the doctors felt that they were doing pretty well in the way of medical charity. Statistics have shown, and it is not my purpose to load you up with lists of figures available in every library,

that the charities of the medical profession irrespective of the large amount of emergency and otherwise uncollectable accounts in normal times average about 33⅓ per cent of their gross. The drug manufacturers and the wholesalers and even the retail druggists have had more or less poignant even if unsuspected competition from these same foundations or centers what with their own pharmacies, and in some of the cruder simpler drugs their own subsidized factories. It is only natural that the pharmaceutical industry should be one of the earlier industries to feel this contact. The university that is not above practicing medicine in competition with its own graduates is not going to shed any tears when it comes to the point of establishing chemical laboratories of such a nature that university manufacture of drugs will be an irritant rival to existing factories for chemicals.

Already manufacturers in many lines have felt the duress of trying to compete with merchandise thrown in the open market from the various factories from prisons or other tax-supported, state controlled institutions. Medicine has felt the pinch through governmental interference and control, (for the most part managed or partially so by laymen) in the attempt to practice medicine through local or state or federal health departments and through lay-dictated, handicapping medical legislation.

Every business should be controlled by its own acolytes, every profession by its own devotees. The tendency to take the control of medical practice, even public health department and sanitation bureaus, out of the hands of scientific medical men and place this control even partially in the hands of politicians or of business men whose work lies in other fields is a gross misdemeanor against the public, against the medical profession and against the business men themselves who are unwitting parties to such a transaction. Business all over the country has had its own troubles with both government interference and with the sinister by-product of political jobbery—the racketeer. Medicine racketeers have worked with a different weapon and with higher sounding title, but a racketeer by any other name is just a racketeer. His aim is destruction, his triumph chaos, and as such he is beloved of socialism and communism by the tax supported welfare advocates, and his works are paralleled in every profession.

For example, the medically forsworn state medicine lay directed, and tax supported movement finds an own sister in communism in the over developed workman's compensation, compulsory health insurance and similar semi-legal meddling with which manufacturing industries are only too sadly familiar.

State medicine has been tried and has failed in Europe. It will fall down on the job any place and at any time. Fiat medicine, politically controlled, means the end of the usefulness of the physician with the same results to the people as would entail if the fire departments of our big cities dropped their magnificent modern mechanism and went back to the hand pushcart, the hose and volunteer fire department.

There is not a single statement that I am making on this occasion that has not been proved to the satisfaction and the confirmation by hundreds of authorities on science, medicine, politics, ethics, and actuarial economists.

One of the most vociferous proofs of the inadequacy of state medicine, one of the most glaring testimonials against communistically conspired conditions for the United States of America lay in the hard-dying Sheppard-Towner act. Born in the spinster confines of the Childrens Department of the Bureau of Labor, it was put into effect in a great many noncomprehending states simply because its proponents, mostly political workers in need of a job, sold the measure to the voters with the idea that when the Sheppard-Towner act was working no child would be born without its mother being in comfortable surroundings and with competent care during her ordeal. It took the states that tried it only a short time to discover that the taxes spent to support this legislation went principally to pay salaried inspectors and that it was illegal under the provisions of this act to spend a single penny of its revenue to buy a new born babe so much as a diaper or an ounce of baby food.

Every manufacturer has found himself up against just such legislation when it has come to the running of his own industry. The sigh of relief that he may have breathed when he thought conditions temporarily abrogated is going to be a howl of despair when he discovers that socialism never sleeps, that one of the greatest of communistic weapons is the art of inviolate bureaucracy such as develops into over-

centralization in Washington, thrives upon the condition of our country now, burdened as it is with more handicapping laws than those which drove pre-revolutionary France to its blood and fire and which, finding medicine in the act of getting out from under is already seeking targets first in the industries allied with medicine and next in contacts farther afield.

Now medicine has its teeth clenched for the fight. It is fighting with organization and with determination. It needs every ally it can get and surely industry, next in the line of attempted conquest, should join the fight against communism. It has been sitting on our doorsteps more hardily than many of us have guessed.

And medicine is not fighting by words alone. In addition to organization throughout the profession there is a tendency to sit down, take stock, evaluate conditions and confer upon a cure. For example medicine is first of all finding out its own weak spots, for if medicine fails in its fight for humanity it will fail with its boots on and its saddlebags over its shoulder.

The socialistic stunt has made much of bringing medical and therapeutic service to isolated communities. So scientific medicine is already busied on some scheme to afford a better distribution of physicians, to minimize the preponderance of specialists and to urge the return of the family physician to cut down the costs of medical preparation and in some wise and equable manner cut down the costs of medical care so that neither the patient nor his physician shall be pauperized. Nor is medicine oblivious to the stress of the hospital situation, to the woes caused the private hospital of good repute by the enormous institutions financed by endowed foundations or the steady encroachment at tremendous needless expense to tax payers for the maintenance of unnecessary government owned and supervised and controlled hospitals.

What is true of medicine is true of industry. This check that has been placed upon socialistic invasion of medicine, even though it be only begun will divert the communistic attack to other lines. And let me call your attention to the fact that the wooden horse upon which these invidious agencies are now focusing is the fatally socialistic measure of Compulsory Health Insurance.

Defeated by medical interests in 1920, it was revived in the socialistic camp, and these anti-American crusaders, realizing that medicine is keeping a weather eye upon their antics are attempting now to foist this measure upon the general public through state or national legislation, which ever may prove the more amenable medium. You find its agitation, you find its campaign swooping out at you from hundreds of tangents. The curse of Europe would transfer itself to American shores. In England, for example, compulsory health insurance practically bankrupted England. It was the mother of the dole, the most misbegotten child of socialism that ever corrupted a self-respecting nation. Under compulsory health insurance the constitutional idler found his way to complete parasitism suddenly made clear. Under the panel system, the honest doctor found himself a protesting pauper, slaving like a pieceworker in a sweat shop and commanded to render service at a rate of speed that is diametrically opposed to competency.

The government has entered so many phases of business in direct competition to taxpayers that it makes it exceedingly difficult for individuals to earn enough upon which to pay taxes. There is too much government in business and not enough business in government or this would be changed.

As can be seen from these remarks, from this point the future of medicine hinges more upon the economic than upon the scientific. Surgery, research, and scientific achievements having hit their stride are swinging along towards perfection insofar as perfection is possible to mortal man. Yet without the leverage of certain economic balance, the three will become as top-heavy as an uprooted tree. Science and economics cannot be divorced in any profession any more than proficiency and economics can be divorced in business and industry. Those same economic tendencies striving to disrupt medicine today are so engaged with the destruction of all existing order and systematized industry as the main objective.

In its own combat against communistic encroachment medicine is fighting the fight of industry, democracy and sanity. "United we stand, divided we fall."

So medicine asks of industry this question, we have let you look into the crystal, do you fight with us or stand idly by?

OCCUPATIONAL DISEASE.*

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During the past decade industrial medicine, hygiene and toxicology have assumed a higher position of prominence and interest in medical meetings and writings.

The health of those in the middle span of life is now requiring and receiving more attention. Some prevention activities in contagious diseases and infant work is being transferred to this age group. With this program, the health of the worker, and conditions under which he or she has to labor, has been and is now under observation and consideration, to determine its relation to general health.

Personal, home and community hygiene and conditions play as much, if not a more important role, than the industrial or occupational role, except in those occupations or industries, which expose the worker to harmful conditions or substances, not encountered in the ordinary daily life of the average individual, at least not sufficient to produce any appreciable body changes or ill health.

These occupational exposures may produce many states of ill health. Some cause specific diseases. As a group they are called occupational diseases, or sometimes industrial diseases, intoxications or poisonings. Exposure to the same harmful substances, in sufficient quantities, under any circumstances, will produce the same harmful effects, whether associated with an industry or not.

What is the present status of occupational diseases in Illinois? Is occupational disease and control a problem for Illinois? The Illinois Department of Public Health requires the reporting of all acute and chronic diseases or other deterioration or impairment of the health of the worker or employer, as a concomitant or result of the use by the manufacturer of any of the following hazardous substances or processes in which poisonous vapors, gases, dusts or fumes are produced in harmful quantities or under harmful conditions: Lead and zinc and their salt or compounds together with the smelting of either or both; arsenic, phosphorus, mercury, copper, tin, manganese, cadmium or their compounds; manufacture, melting or pouring of brass or bronze; the coal tar and petroleum derivatives and distillates; all acids either mineral or organic including chromic and chromates; all alkalies; all gases, including illuminating, refrigerant, automobile and others; abrasive or disease producing dusts of metallic, mineral or vegetable origin, turpentine, carbon tetrachloride, carbon disulphide, hydrogen sulphide and lead tetraethyl; methyl alcohol, caisson disease and other poisonings. (Jake paralysis.)

The records from the Illinois Department of Public Health for the past six years show:

The number of establishments having occupational diseases were:

1927	1928	1929	1930	1931	1932
35	36	42	43	26	16
Cases of occupational disease reported:					
210	114	213	124	97	61
Number of men employed in Plants having occupational disease:					
34,279[1]	28,670	35,000	38,492	27,644	2,514
22,000[2]	21,000	46,880	30,000	23,000	0,000
12,279[3]	7,670	11,880	8,492	4,644	2,514

1. Total Employes
2. West. E. Co. employes
3. Employes all other plants

Cases of lead poisoning only:					
209	109	120	79	84	46
Number of deaths from occupational disease: (Taken from death cards).					
...	1	9	8	2	10
Cases of lead poisoning reported by myself:					
58	32	17	5	4	15

The total number of cases of occupational diseases reported for the past six years was 819, of which 647 or 79 per cent. were due to lead. There were thirty deaths reported due to occupational disease, making one death for every 27.3 cases reported. One hundred thirty-one or about 20 per cent. of the lead cases were reported by the writer, who does about 40 per cent. industrial work. This data reported for six years, in an industrial State like Illinois, with all its various industries and over 11,000 physicians, with one reporting 16 per cent. of all the cases reported, caused me to attempt a survey of the industries in Illinois, to ascertain, to what extent, in my own personal opinion, from the nature of the industry, occupational disease hazards were a possibility.

The best and latest information I could find was from the United States Department of Commerce, Bureau of the Census, for manufactures for the year of 1929 issued in 1932. In 1929 Illinois had 15,333 manufacturing estab-

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lishments reporting products valued at $5,000 or more. The salaried employees numbered 135,952 and the average number of wage earners was 691,555 or total 827,503. Seven hundred seventy-two establishments had no wage earners; 12,360 had fifty or less and 76 establishments had 1,000 or over. According to the nature of the establishments separate figures are listed in over 200 classifications. Thus, by the nature of the products they manufactured, I judged, whether or not, in my opinion, there may exist an occupational hazard for some employees.

I found 83 classifications on this basis, which totaled 6,290 establishments employing 83,387 salaried workers and 390,987 wage earners. Total employees 477,354.

Lead is probably the oldest and most widespread industrial or occupational hazard in all countries and in the State of Illinois. Lead or its compounds are used in practically every industry in some process or step in the manufacturing procedure.

Medical text-books do not devote much space or emphasize the importance of the subject, but there is abundant literature on lead and its effects.

I have been interested in industrial toxicology for twelve years, and have enjoyed quite a liberal experience with lead poisoning, from several types of hazards in different industries. For ten years I had a monthly average of about 200 men, who were under my observation and care, on account of lead hazards, exposure to fumes, vapors and dusts. There were always some showing absorption and generally one or more cases of poisoning or intoxication under my care. I was engaged not only as a treating physician, but primarily in a preventive capacity.

My experience with lead poisoning over this period of time does not agree with some of the literature as to the serious after effects of disabling conditions said to be produced by lead. I question if the ill effects of chronic absorption are so severe. I know in the distant past gross neglect is recorded and much severe poisoning occurred; also women and children were employed and the records, particularly of some foreign countries showing much ill health, was a disgrace to that period.

Ohio is an industrial State nearly the size of Illinois. In 1929 Ohio had 11,855 manufacturing establishments, employing 741,143 wage earners.

The bulletin of The United States Bureau of Labor Statistics No. 488, gives the number of compensated claims for lead poisoning from July 1, 1924, to July 1, 1927, in the State of Ohio as 907; 37 or 4.1 per cent. terminating fatally. Permanent disability in only one case; disability over 7 days 759. Less than seven days, 45 and 65 cases with no time lost. The 907 cases are distributed in 19 classes of industries. The days lost total 277,027 with an average of 305 days lost per case. This I cannot understand, almost one year disability per case. Four industries with one case occurring in each has recorded the cases losing respectfully 11—3—18—24 days, so I judge the average days lost means just that. Evidently most of Ohio's reported cases are severe poisonings.

I will give you some data, from my own experience, with lead intoxication or poisoning, in one lead industry usually referred to as the most dangerous of all lead hazards (except tetraethel lead) namely manufacturing of red lead and litharge; both are fine dry powders. Starting this plant with inexperienced help was a trying situation and naturally a greater number of cases occurred in the beginning.

These datas do not include absorption; all cases are intoxications with subjective and objective symptoms. The first year, 1922, we had 68 cases with 559 men, losing 1,133 days or 17 days lost per case, average duration of exposure 12 weeks. One case to 8.22 employees or one case to 82.8 tons finished product. The next year, 1923, had 48 cases with 685 men, losing 613 days, or 13 days lost per case. Average duration of exposure 79 weeks; one case to 14.2 employees or one case to 151.3 tons of finished product. The year of 1929 reached our greatest production; we had 9 cases among 497 men, losing 228 days or an average of 25 days per case, one case to 56.2 employees or one case to 1,264 tons of finished product. The total number of cases for ten years (1922 to 1931) was 229, losing 4,891 days, average number of days lost, for total cases 21.4 days; actually lost 25.9 days. Total cases for the first five years 177, total cases for the second five years 52, a 70.6 per cent. decrease. Tonnage for the first five years 38,058, tonnage for the second five years 47,488 a 25 per cent. increase. There were no

deaths; one case of extensor weakness of both wrists permanent, after 7½ years of exposure. Two cases with acute cerebral symptoms that cleared up rapidly; one uremic in type and the other maniacal both precipitated or at least associated with acute alcoholic intoxication. No permanent disability.

Kidney damage is supposed to be easily produced by lead. Kidney irritation or damage, as indicated by urinalysis, has not been very common in my experience. Checking the records from one hospital, on urinalysis, on all of my cases that were in the hospital for treatment or laboratory work: 81 showed no albumin or casts; 9 had casts and albumin clearing up before leaving the hospital; 2 had albumin, but no casts, which cleared up; 4 with albumin and casts and 2 with albumin, with no later urinalysis recorded. These were all men ill with lead poisoning, with absorption over various periods of time, the greatest 21 years, was negative for albumin and casts. Hypertension was not a common finding either; 15 men examined last summer before oxide plant ceased operations had five years or more exposure. The average for the 15 men were: length service 7.6 years, age 34, height 5 feet 8 inches, weight 143½ pounds, blood pressure systolic 130, diastolic 77, hemoglobin 80. Two showed slight trace of albumin, but four subsequent urinalyses have been negative; the youngest was 29, and the oldest 51 years of age.

I have not attempted to show or tell you lead is not a dangerous substance or that it cannot cause severe illness or death, but have attempted to show, that it can be made more safe for workmen with the proper co-operation between the management, workmen and medical department, provided the preventive program functions twenty-four hours every day.

Prevention is primarily a medical problem; engineers, chemists and others may be utilized, but the medical mind is essential in the team. The treating Doctor, who may occasionally visit in the executive offices, is of little value. The physician must first be interested himself in occupational diseases and their prevention. He must spend sufficient time around his plant, to learn every detail of operation, starting with the executive's offices down to the least laborer. He must know the chemistry and physics, taking place at the various points, and why processes are done this way and not some other. He must spend sufficient time observing the men at work, how they accomplish their work, study the character of the men including foremen and higher officials. With this knowledge he will know details, that will be necessary to put over his ideas or plans.

Industrial life or work is interesting to me, because, twenty-one years ago I worked in plants having industrial hazards; for three and a half years while out of school and for five summers while attending school. Workmen and their habits, customs, ideas and languages were familiar to me. Their attitude towards industry in general, I understood; their ignorance concerning health hazards was shared by me at that time. I also was exposed to silicosis working about a sand blasting outfit, with dust so thick it was necessary to keep your eyes and mouth closed. Many a time, I rinsed my mouth out to get the grit from between my teeth, and on night shift knew no better than to sleep, when I had time, within fifty feet of the sand blast, and on awakening would wipe the dust off my closed eye lids before opening them. The sand blasting outfit was constructed resembling a corn crib. The purpose was to keep the spray of large particles from striking others outside. We knew the dust was unhealthy in general, and that the sand blasters became sick, and went to the hospital to have the "sand pumped from their stomach." From the gritty feeling in our mouths, the idea was that swallowing the sand made you sick, never thinking about lungs. I even requested a "pig snoot" which I never received, sand blasters were given one, but they never used them very often. The helmet was for physical protection. The plant physicians and management were practically as ignorant as we were, at that time.

The next interest has to be on the part of the management, it must be sincere and honest in purpose; not any apparent interest, simply to comply with legislative regulations, because, all of the necessary measures cannot be legislative in nature, only in principle. My companies had this interest, and my compensation was figured, to allow for study, time to think and expenses to travel and see what other companies were doing. The vice-president's parting words were: "Doctor, I like the Chinese system, I hope you don't have a patient."

This is the spirit necessary for success. After digging below the surface on lead in text-books and plowing through the literature and special treatises on lead, especially some of the foreign data, I thought, "what a fine mess you have gotten yourself into, my boy," but after visiting other lead plants, talking with the executives, getting the detail of the plants from them, and visiting with the plant physician, I felt more comfortable but still could not associate the picture I received by personal contact with the one from the literature. After getting well into the work I could appreciate the literature on the subject and realize the hazards that had existed and still exist in some places.

The workman is the next interest required to complete the triangle. His interest and co-operation are difficult to cultivate, especially in a plant already operating, with all the habits, customs, and established ideas well grounded. One plant had been an old established plant for years, while the other was just starting operations, each manufacturing a different product and differing in all respects. The workman must be sold the idea of prevention and made health conscious. Rules and regulations must be understood by him and the reason explained in his language, impressing the fact that all is for his benefit. All the benefits of science and an honest effort to protect him, are of no avail, if he will not cooperate. Fully one-half of all our illness was due to the disregard of the man himself. He can devise more ways and means, to make a respirator do the opposite for what it is put on his face to do. We have used all the respirators on the market I believe, even had one set of men for whom it was necessary to use army masks with canisters for a time. The two night shifts are problems when day time supervision and authority are absent. If not checked closely, intoxications will appear, to indicate laxity. I have had few men stay with the industry, that did not need a good belly ache, to teach them to respect the material with which they were working. Some men becoming leaded after short exposure, and returning to the same job later worked for years, never receiving enough lead to have an attack, with no change in the working conditions but a change on his part, by doing what he was told. Certain hazardous work is always done slowly and with ease, try and teach a man to hold a long handled shovel at the end, stand up, and shovel from the top of a pile and gently swing it over a receptacle, resting it on the other material and gently turn it over, and reverse the operation back to the top of the pile. All such seemingly minor details are what achieve success. Stubborn and careless workmen have to be discharged or penalized for their own benefit, and to protect other employees. Prevention measures cannot be carried out by simple instructions to foremen. Their responsibility is to get out a given amount of work; production is their interest and job. We tried it; they will take chances and overlook infractions of the rules or even wilfully break them to get a job done. A safety man is essential but he must have authority throughout the plant, and right or wrong his word goes. He will soon correct his own mistakes.

Hoods and down drafts and other mechanical devices are essential. The faults I find with them are: not close enough to the source of dust, too many on one line or system, not enough pull. I like to see them function so that my cigar smoke, or match flame will not hesitate to travel up or down as the case may be. Respirators are your last resort as a mechanical device, but these have to be watched constantly to see that they are in working order and functioning. Watch the hairs on a man's lip or in his nose, the respirators may do good for the first few hours, but what about the remaining hours? In using disks it has been necessary at times to send a man round as a cigarette girl ever so many hours changing disks.

This is not as easy to accomplish as it is to write about. Time is required, changes are slow, and new problems are always arising because no industry stands still; procedures and methods are always being improved upon or at least an attempt to do so.

If the program is running well, some of the work can be done from your office, because any man coming in who is leaded has been allowed to absorb too much, either by his own neglect or some one else's. If you know your plant, a detail history as to what he has been doing and how it was done, tells the story. Many a man has indirectly told me, that our plans were not being carried out and a telephone call may correct matters. Hours of work, over time, alternating of positions and many other items are

always part of the program. In fact the program is never complete for any great length of time.

I would like to mention silicosis, a very serious occupational disease. It is caused by inhaling dust contaminated with silica, which causes the production of scar tissue or fibrosis in the lungs and usually becomes complicated with tuberculosis, if not associated with tuberculosis from the beginning.

Silicosis is referred to as an ancient disease, still definite knowledge concerning it does not date back many years. X-ray has differentiated and made silicosis a definite disease identity. Its development depends upon the amount and size of silica particles inhaled, and may require years to manifest itself. X-ray evidence may be present without clinical findings. It is said to be a constant progressive disease, once firmly established, with no regression, and early death after it once becomes disabling.

Silica is found in most hard substances forming the earth crust, various ores, minerals, stones and sands. The use of these substances with the production of dusts is responsible for the disease.

This is one occupational disease that many industries, having the hazard, do not appreciate the danger, on account of the time required to develop the disease, if air contamination is slight.

Until the recent past, silicosis has often passed as tuberculosis. I feel that it is a very important industrial health problem for Illinois. Time will not permit mentioning the various other occupational diseases.

The treatment of occupational diseases is the most important phase of the whole subject, because, in the treatment lies the cure; to cure, the treatment ultimately resolves itself into prevention. The prevention of occupational diseases is the most satisfactory and economical cure.

Medical therapy is practically confined to eliminative measures, and symptomatic treatment, after removal from further exposure. Calcium therapy in the acute toxic stages of lead poisoning, with de-leading by alkalies or acids, as outlined by Aub ("Lead Poisoning," by J. C. Aub, L. T. Fairhall, A. S. Minot and P. Rezenkoff, Baltimore, Md., Williams & Wilkens Co., 1926), is the accepted treatment for lead. Sodium Thiosulphate has been of little value in my hands with lead or other metal poisoning, but a 2 to 5 per cent. solution as a shower bath, is a good preventive for arsenic lesions of the skin.

In conclusion I will simply repeat the old adage, "An ounce of prevention is worth a pound of cure."

Katherine Building.

DISCUSSION

Dr. Wm. C. Nordholz, Chicago: I am sorry I did not arrive a bit earlier, but I was of the opinion that my time to discuss this paper was an hour later than I find the schedule reads. However, I had the opportunity of reading Dr. Brennan's paper, which he sent me the latter part of the week, and I enjoyed it very much. He covered the subject most thoroughly and has accomplished much in occupational diseases. I am happy to have learned that he has real contact and does not report to the 42nd assistant to the vice-president, but does report direct to the vice-president. I believe this is a big factor, and without this contact, I question whether he would have been able to accomplish these wonderful results.

I think the biggest handicap most medical men have who are connected with an industry is that they do not have contact with the president or vice-president of the organization. In my large plant, I report direct to the president of the company, and he and I have established a general policy pertaining to all health questions; the managers, superintendents, etc., do not have the authority to interfere in any health problem in this industry.

The late Dr. John Dill Robertson, I believe, was quite true when he informed the Wilson & Co., packers, that the doctor should be a member of the board of directors, and I believe that the time is coming when these captains of industry are going to realize that their directors of health deals with the largest asset they have, and that no board of directors will be complete without the health director being a member, just as we have directors who have charge of sales, others who have charge of manufacturing and traffic, etc., and when they realize this, I believe, bigger strides will be made in health and industry.

I have in mind probably the largest plant in the state. Three or four years ago, they employed as high as 36,000 or 38,000 people, but the medical department apparently exercised no authority whatever for I had the opportunity about a year ago to inspect a part of this plant where they were using carbon tetrachloride to clean small metal parts. Our plant was about to use carbon tetrachloride and I was consulted before they entered into this project. I at once raised objections, but I was assured that this big institution had the thing thoroughly safeguarded and if I would just go out there, I would be convinced that the thing was in tip-top shape.

On my arrival there, I met the industrial engineer and the superintendent of the plant and then we jour-

neyed to the department where the carbon tetrachloride was used. Before arriving in this department, I made inquiries whether their set-up had been approved by their medical department, and they assured me that it had. When we arrived within about 50 or 75 feet of the first operation, carbon tetrachloride fumes could be detected in the air. In the first operation, there is a tank where the parts were immersed after being placed in a perforated container, somewhat the shape of a pail with a handle, the tank was sealed, and that particular operation was apparently safeguarded as they showed me a suction pipe drawing the fumes from within the tank.

However, in this next operation, the perforated pail or container was lifted up out in the open air, with all the parts well saturated with carbon tetrachloride, the fumes readily disseminating throughout. I pointed out this operation, and they informed me that their men wore masks and they pointed to one these small nose respirators without any fresh air intake as the protecting mask. I made inquiries of the engineer as to the intelligence of the respirator as to how it could sort out the fumes of the carbon tetrachloride from that of the fresh air. He had no answer to this question. I then informed him that in my opinion this type of a mask was absolutely no help, but put more of a health hazard to the occupation by using them, inasmuch as, the employee thought he was protected but he was not.

The next operation showed girls scrubbing small parts with a small hand brush. Carbon tetrachloride being set within a recess of the work bench in a space about 8 x 8 inches, and an open container of fluid about 1 inch below the level of the table. Plenty of carbon tetrachloride fumes, of course, could be noted over these benches. Examination of the hands of these girls showed them to be all fissured and none of these girls had worked there over a period of 3½ or 4 weeks, where they used large cloths saturated with carbon tetrachloride. Another splendid way of disseminating the fumes of the carbon tetrachloride and this set-up had apparently been approved by the medical department. I can hardly believe this to be a fact, but I am rather inclined to believe that they borrowed the rubber stamp of the medical department and stamped the approval on it.

We have a practical safety man at our plant, and between us we worked out a plan which properly protected all of the employees, there being no dissemination of the carbon tetrachloride than can be determined. Had we had any difficulty, I would probably have called upon our good friend Connolly for one of the men in his department, and I know we could have worked out a plan that would have been very satisfactory.

We have an O. D. law on occupational diseases, but I don't believe that it is enforced, and until all occupational diseases are put under the Compensation Act, I question whether you will enforce the O. D. law. The O. D. law has no teeth, at least I don't think it has, and teeth should be put in the law. Now, as to what is going to constitute an occupational disease and how to control this law has been a problem for some years. We have a few occupational diseases coming under the Workmen's Compensation Act at this time, such as lead and its various forms, arsenic and mercury, but there is always a question as to how to put them under the Act for it has been a difficult problem to determine the onset of the disease whether Brown & Company is responsible for the occupational disease or whether Jones & Company.

Chemical engineers have added so many substances that are used in industries today that the opportunity to study these substances as to whether they produce any occupational disease or affect the general health in ane way or another of the employees has not been possible. There is no question but that this must be done, and I am rather inclined to believe that the best place to do this would be at the State University for the medical school is in Chicago, where virtually all of the important occupational diseases can be encountered.

I proposed to our good friend Victor Olander of the Illinois Federation of Labor the following:

That the Governor appoint a commission of nine men who would be empowered to make a study of the various occupational diseases or the substances used in producing these diseases, and after this commission had approved of the disease as being an occupational disease, that disease or substance would then be added to the occupational diseases of which we have sufficient knowledge today to designate them as such, namely, such things as the various forms of lead, arsenic and mercury and all of the others. This commission would be composed of six doctors and an industrial engineer and a representative of labor and one of the employers. These studies to be made possibly through the Illinois Research Hospital.

A set-up of this type, I believe is the answer in doing the research work in occupational diseases, for the present law is such that the Act can only be amended every two years and it always causes further controversy when each substance or disease is added to the law.

Another point I feel is of the utmost importance and that is to develop a closer cooperation between us, who are handling work in industrial medicine and surgery, and say, the State Department of Health.

Some years ago when Dr. Arnold H. Kegel was the Health Commissioner of Chicago, I proposed to him the creation of an Advisory Board on Occupational Diseases and Industrial Hygiene to the Health Commissioner. He took kindly to the idea and such a Board was appointed by him, and I had the privilege of being the chairman of this Board for some time. We met at the Commissioner's office with his medical men who were handling the industrial hygiene and the Engineering Division, of which our good friend Connolly was a member. It was sometime before we were fully organized and got into the subjects, but we finally did and I believe it was the opinion of most of us that some real constructive work was being done when politics changed the Health Commissioner of Chicago. We who were giving our time gratis to the subject

felt we could not continue with the newly appointed Health Commissioner.

I believe such a Board working in conjunction with the State Department of Health might be quite a factor in developing a closer cooperation than has existed.

Dr. Brennan: I was glad to hear Dr. Nordholtz recommend an occupation industrial commission to study the occupational disease situation in Illinois. I told you at the beginning I had a paper, which, when put together, was about an hour's talk. In it I had some recommendations regarding a medical commission, with the assistance of engineers and chemists to first determine and know more about the industrial conditions in the industries that have hazards, to set a standard of what is required as a safety measure by actual dust count, actual determination of pollution, and a thorough grading of industries that have occupational hazards, somewhat similar, in the case of milk, as Grade A milk, we put a stamp on milk to designate its value and safety to health. If you grade an industry as Grade "A" that which conforms to all the rules and regulations and recommendations, that the air pollution is cut down to such an extent that it is perfectly safe, and see that these conditions are maintained and then be willing to back that industry against all fraudulent litigation. The industry will gladly go along with your program, provided you can show them you know more about their problems than they do, and provided there can be some reward to them for changing from their present situation. I think the industries can get substantial reductions in insurance rates. Many insurance companies are just waking up. They have been stung so often. They have taken plants on a competitive basis, and have taken whatever comes along with the hope that the hundred per cent. plants will equalize the bad ones. Also these industries, if they are labeled as such and carry out this program, can secure a better class of workmen; I think everybody will benefit by it. But I think you have to give a little reward to the industry, something similar to a talk I heard by Dr. Meyer, the grand daddy of Grade A milk. Pasteurized milk as baby food was not totally satisfactory. Certified milk was too costly, he found the only thing unsatisfactory with pasteurized milk, particularly for babies was the fact, it contained a lot of gas forming, spore forming bacilli from manure and dirt. He worked out the solution, termed as a grade A milk. They told him he was crazy, that he couldn't get anybody to do the simple things he wanted done. Finally talking to a hundred and forty or fifty dairy farmers, he explained his plan to them in their language and only nine of them agreed to go along with his suggestions. All these farmers had to do was to wash their hands before milking the cow, washing the udder before they milked and scalding out their milk pails. They designed a different pail to keep out dirt, to cool the milk to a certain temperature. They taught them how to do in with water. And as the milk came in, they paid a premium above the standard price based on the bacterial count. Fifty thousand bacteria per C. C. was the maximum and as the count decreased they received a higher price, and now they receive raw milk with as low as ten thousand bacteria per C. C. The factor that makes the farmers go along is their reward financially. The first few farmers got their checks with an extra dividend of five or nine dollars on account of the "bug" count, hard-shelled bacteria, as he calls them, and the other fellow thought he had better wash his hands, wash the cow and do a few things so his check would increase, and the grade A standard has spread throughout the whole country. Dr. Meyer is kept busy traveling around the country telling the farmers and dairymen how to produce Grade A milk, and the factor's that put it over, was what? First he knew more about his subject than any one else. He knew where the trouble was, and how to correct it by simple procedures and he gave a little reward to the individual who changed from his routine to the one recommended to produce grade "A" milk.

Dr. J. J. McShane, Springfield: I shall have to take exception to my good friend, Dr. Nordholtz's statement relating to enforcement of the occupational disease law. First, I wish to state that the enforcement of the Occupational Disease Act does not come directly under the Health Department but directly under the Division of Factory Inspection in the Department of Labor.

We regret that the law does not require that all physicians—whether they are in charge of medical service in some plant or in private practice, must report all cases of occupational diseases diagnosed by them. Unfortunately the only report that we receive at the present time are reports sent in by physicians employed by different plants having their men examined under the provisions of the occupational disease law. I believe that there should be some standardization of the medical examinations, so that we will get some uniformity by those making the examinations, for I am sure that some of these plants must have some occupational diseases—at least there should be one or two reports from the large number examined monthly in some plants.

I do hope that we can get help from the medical profession, especially from those doing industrial medicine and surgery in advising us as to the different plants that come under the occupational disease law and do not have the monthly examinations made as required by the Occupational Disease Act. If this were done, we could go a long way towards getting a medical service in plants, where at the present time very little medical work is carried on. Many of the plants that formerly sent in occupational disease reports are not reporting at the present time, due to the fact that the plants' have not been in operation for weeks and others for months. Others complain that companies in the same line of manufacture are not complying with the occupational disease law and that is their reason for not wanting to continue having monthly examinations made.

As I stated before, we receive the monthly reports and relay them to the Division of Factory Inspection in the Department of Labor and we have no way of knowing just what factories should report only through being advised by medical men, industrial surgeons or

by the department of Factory Inspection or by our own Inspector of Industrial Hygiene. To illustrate the point, recently three men came to the Department of Public Health making complaint that there was a pottery factory in their community that was responsible for a number of cases of silicosis. Of course, we did not know whether this is true or not but at least their complaint informed us of a pottery manufacturer that was not reporting or having their men examined. I am sure that there are a number of plants in Illinois that should have their men examined for occupational diseases and if the medical men will only furnish us with information as to where these plants are, we shall appreciate this information.

Dr. Lloyd Arnold, Chicago: I particularly enjoyed Dr. Brennan's paper, inasmuch as my contact with industrial work is that of teaching and usually more or less on the theoretical side, and particularly from the laboratory standpoint. I think Dr. Brennan gave a splendid version of the practical points in his discussion. I was particularly interested in the emphasis he placed upon prevention, upon the environment of the worker, and the point that one should not wait for intoxication of the worker before making his diagnosis. Personally, I got a lot of information from his paper that I am sure I wouldn't have gotten if I had listened to one who hadn't his actual experience with the background of theoretical paper. I think it is an excellent paper.

Dr. C. O. Sappington, Chicago: I think Dr. Brennan has given us a very excellent paper. I have known Dr. Brennan for some time and have known something of his extensive experience. He has certainly epitomized and summarized this subject in his paper very well this morning.

I would like to emphasize two points that he made and, if I can, add a thought to each one. The first point is regarding the education or rather giving information to the worker. I don't like the word "education" with regard to industrial workers because a good many of them don't like to be educated. They think it is a painful process to learn. So, giving information to the worker is the expression I would rather use. I think that is a very vital point. How can we expect cooperation on the part of the worker in methods of protection if he doesn't know and appreciate something at least of the hazards to which he is exposed? I would be willing to go so far as to say that you can not expect ever to achieve protection in industrial work until you have informed the worker as to the type of hazard to which he is exposed and, therefore, gain his cooperation through his knowledge of his industrial exposure in the protection of him against the poisons and the various other industrial hazards.

The second point I wish to emphasize is this, that prevention in industrial diseases is very much more important than cure for this reason: There are a number of industrial diseases for which there is no adequate cure. Therefore, prevention becomes of very much greater importance in those diseases than treatment. I refer particularly to silicosis which, of course, is shaking the country from stem to stern. There is no adequate cure now known. I also have in mind lead poisoning because lead is usually stored in the body over long periods of time after being once absorbed. The lead is probably set free from the bones where it is ordinarily stored and these periods are called "toxic episodes" by Aub and his co-workers. In addition, acidosis and any acute infectious disease can cause the setting free of lead into the blood stream and a repetition of acute lead poisoning symptoms. There is a great group of industrial dermatitides. One skin specialist in this country, who is a very noted man, said at one time that our patients never die and they never get well, and that is just as characteristic of industrial dermatitis. It is a very difficult thing to do anything with in most instances after it has occurred. Therefore, prevention becomes of great importance in these conditions in the industry or those which contribute mainly, statistically speaking, to industrial illness occurrence, silicosis, lead poisoning and dermatitis. It is important that we develop, together with engineers, chemists and others, methods which will prevent this type of difficulty rather than relying upon therapeutic measures.

Dr. Brennan, is closing: I want to thank the discussants for the way they received the paper.

Regarding Dr. Sappington's remarks about, once leaded, always leaded the rest of your life and that the toxic episode will happen at any time, I have read Aub's work and I appreciate it. I think the emphasis on recurrent toxic episodes years after exposure ceases, is drawn more from the theoretical possibilities rather than the actual clinical occurrences. I know a few authentic cases have been reported of acute toxic symptoms of lead poisoning, without any history of lead absorption as far as was known, except exposure dating back some nine or fifteen years. Also there are a few cases in the foreign literature of women who left the lead industry and some eight, ten or twelve years later have had acute attacks of lead poisoning, which was attributed to stored lead over that period of time. There is a question in my mind whether there is not some other source of lead that is not ascertained, or at least these individuals have some peculiar make up and are of rare occurrences. Stored lead as such is supposed to be practically harmless as far as it is possible to determine, and after exposure ceases, the concentration in the bones is reduced to a minimum. I have had many men in my community who have worked in these industries, and have been leaded, and men who have worked in them as long as twenty-one years. They all know me. In Illinois, lead poisoning is the principal occupational disease under the compensation act. I have never had a recurrent case of lead poisoning after it left my care. I have had cases with recurrent attacks when under my care. They have acute attacks today, start to improve, four or five days they start all over again, or may go along for a week or two very nicely and then become acute again. The effects of metabolic changes are very definitely demonstrated clinically.

We have always had trouble following the Christmas

holidays. In fact, we let both plants slow down before Christmas and wait until after New Years to resume normal operations. It may be from imbibing the Christmas spirit or changes in diet during this period of time. We always have some acute cases around election time or other times when there are celebrations. Also with men who have family troubles, whose wives leave them and they are "batching," trying to get along with their own particular cooking. All those little things affect the men absorbing lead close to their tolerance. We have had another period along about the end of May until about the middle of July, when cases were more frequent. Those were the peaks for cases of lead poisoning, namely Christmas time and along about the beginning of summer. I never could figure the June and July phase. I don't know whether it is a change in diet coming on with warm weather, and a lot of green vegetables and fruits, or the effect of sun rays stirring up dormant lead. I have had one case of encapsulated lead in muscles liberated by x-rays, in my opinion. During these two periods for quite a number of years we had a definite increase, in cases of acute lead intoxications. I am sure if any of these men developed recurrent attacks after they left the industry, they would come to me or at least they would go to the company for medical care or compensation, because they know what these attacks are; the men who work in this industry know exactly what the clinical picture of lead poisoning is; in fact, they know it too well. I see some of them every day; some are my own private patients. I treat some of them in other industries. I see them in the hospital as other doctor's patients. I question them as to their health and feelings and they always talk to me about the time they had the belly ache, etc., and how good and strong they are, etc.

As I say, I cannot agree with the literature on the serious after effects and the serious ill effects of chronic absorption. I will admit a great deal, but I think the picture is absolutely over-drawn in many instances.

DISSECTION OF TONSILS AND TONSIL STUMPS*

Illustrated by Moving Pictures on the Cadaver and Living

R. H. Good, M. D.

CHICAGO

The frequency of tonsil stumps following so-called tonsillectomies is a subject of the greatest import today.

Otolaryngologists should give much time and study to this subject as it is one of the most over-looked fields in medicine.

The writer does not elaborate in this article on the symptoms and constitutional disturbances of tonsil stumps nor how the symptoms differ from tonsil infections, but rather dwells on the importance of removing tonsils completely and when operating on stumps to first find the capsule of the stump and remove the capsule with it.

Dr. J. P. Clark examined 143 patients who had had so-called tonsillectomies and found 59 of this number had tonsil stumps.

Dr. P. S. Rhoads examined several hundred nurses entering training in the Presbyterian and Cook County Hospitals who had had tonsil operations and found that 73% had tonsil stumps. In one year he also found 23 cases that had definite indications for operating on the stumps and all 23 were relieved of their symptoms after removal of the stumps.

Caylor and Dick investigated the bacterial content in tonsils and tonsil stumps and found a greater number, in proportion to weight of the tissue, in tonsil stumps. Furthermore, they found that fibrous tonsils and scar-covered crypt tonsils more responsible in causing arthritis, neuritis and endocarditis than other tonsils. W. W. Machlachlan has frequently found fibrous and scarred tonsils in patients with rheumatic fever.

Rhoads and Dick quote, "It is shown by our work that tonsillectomy as usually done, even by specialists of established reputation, fails to accomplish this end in 73% of cases because of incomplete removal of infected tonsil tissue. There is even indication that in many instances the condition resulting from incomplete tonsillectomy is worse than that existing before operation. The complete removal of all tonsillar tissue is necessary when the operation of tonsillectomy is undertaken."

I wish to emphasize the importance of reading the article written by P. S. Rhoads and G. F. Dick on the efficacy of tonsillectomy for the removal of focal infections, Journal A. M. A., 1928. This article should be read and digested by every physician.

The diagnosis of tonsil stumps is difficult and if we depend upon appearance only we will miss many stumps. I have had many cases who were examined by physicians and specialists who failed to diagnose a tonsil stump.

When a patient has symptoms of focal infection which cannot be located in any other part of the body and the patient has had his tonsils operated on, it is our duty to examine carefully for tonsil stumps. The only way of knowing

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, May 17, 1933, Peoria.

positively whether there is a tonsil stump is to cocainize the throat, then with a strong forceps grab the tissue between the pillars and pull firmly. If a lump appears like a ball, beyond the forceps, there is a stump.

It is these buried or covered stumps that are many times more serious as foci of infection than the original tonsil.

When one is examining for tonsil stumps one must look for fistulas in the pillars and at the base of the tonsils. Care must be taken to look for hyperemic areas on the pillars, which are caused by infected stumps. One thing can be depended upon and that is if scar tissue can be seen between the anterior and posterior pillars or in the palate, there is usually a tonsil stump back of this scar. I have never seen this to fail.

On examination one may at times find blebs on the pillars, often of considerable size, and I have come to the conclusion that some of these blebs are not always mucous blebs but membrane growing over a fistulous opening which forms during the quiescence of the tonsil stump infection.

The diagnosis of quinsy from tonsil stumps is frequently overlooked because the scar tissue prevents the abscess from making its typical picture.

The writer has operated on hundreds of tonsil stumps and has frequently found an abscess in the stump and still more frequently a non-inflammatory peritonsillar abscess beyond the capsule of the stump. These abscesses cannot be easily diagnosed before the operation and with the ordinary method of operation they will not be reached. It is necessary to first find the capsule of the stump and then to dissect it all the way down and remove it with the stump, if one wants to be sure of a complete removal.

Dr. B. H. Orndoff and I sectioned four hundred tonsils many years ago and we found mucous glands in the tonsils along the trabeculae and some external even to the capsule. We found ducts leading from these glands to the crypt epithelial but did not find any ducts emptying directly into the crypt. Dr. Orndoff thinks that the mucus empties into the crypts through the stomata of the crypt epithelial cells.

It has been my observation for years that a quinsy is always preceded by a follicular tonsillitis or some other acute or chronic inflammation of the tonsil.

From our study it can easily be seen how an infection in the crypt can travel through the cryptic epithelial into the ducts to the mucous gland and produce an abscess which becomes a peritonsillar abscess by the pus breaking through the capsule, or if a gland external to the capsule is abscessed it is already peritonsillar.

The reason why a tonsil stump may be more serious as a focus of infection is because when the cut surface heals it frequently closes a crypt with scar tissue or membrane, thus making it a blind pocket, and it has no way of draining except by absorption or fistula formation.

There is hardly a week goes by but that a patient consulting us will state that their family physician said that septum and sinus operations are not successful but they never say that about tonsils because they do their tonsils themselves. I will frankly state, without reservation, that if our nose and sinus operations were not more successful than the general run of tonsil operations today, I would close my office.

If any of my patients consult any of you and I have left in a piece of tonsil, I do not ask that you protect me but rather that you protect the patient by removing the stump. Do not, however, expect to remove the stump with a forceps and snare without first finding the capsule and then dissecting the capsule all the way down. Neither take a sharp knife and remove a piece of the stump, such as was done twice on my tonsils, as it will not remove the entire stump.

The improvement in the health of patients after enucleation of tonsil stumps is much more pronounced than in tonsillectomies. The alarming question is why we have such a high percentage of tonsil stumps? The answer is quite simple. We have devised all manner of implements to remove tonsils instead of dissection because of poor operating lights.

Does a surgeon amputate a finger or toe with a guillotine? Does he remove lymph glands with a snare or gall bladders and prostates with instruments that do his thinking for him?

If the tonsil were located on the outside of the neck, with the same anatomy, would we have devised such instruments as the tonsillotome, the Sluder, the Beck, the vacuum cup, the La Force or the French punch? The tonsil is as accessible as many other structures in the body for dissection.

The answer to all these questions is inadequate illumination to properly see what is being done.

All these inventors of the above mentioned mechanical devices used the ordinary head mirror for light, or, what is still worse, a light on the forehead which is far above the eyes. This illumination is inadequate for complete dissection of the tonsils.

If all Otolaryngologists had used parallel-ray head lights such as were used by Kierstein, Killian and Freer, none of these instruments would ever have been invented. The general physician can use the Sluder and the Beck just as well as the specialist, for both usually leave a piece of tonsil behind. If we specialists cannot do better work than those who are not specialists it is only right that we should lose our business. Nothing can harm an operator more than to have other physicians find that he has left stumps. Patients will not return.

Dr. Robert H. Fowler and Dr. T. W. Todd wrote an excellent article on the tonsil in the A. M. A. Journal in May, 1928, which to my mind has been the most instructive and valuable work for years. They describe the tonsillo-pharyngus muscle which is attached to the tonsil between the upper and the lower lobes. They stress the point that if this ligament is not cut through before the snare is applied, the lower lobe of the tonsil will be left in. We wish to emphasize the fact that this muscle or ligament is a broad band completely separating the spaces between the tonsil and the pharyngeal muscles into an upper and lower space which we have named supra- and infra-tonsillo-pharyngus fossae. A peritonsillar abscess forms in either the upper space or the lower space. When one dissects a tonsil down to this muscle, only a little over half of the tonsil is dissected and to put a snare on at this time will often remove only the upper lobe.

Many tonsil operators have never dissected a tonsil on the cadaver and yet think they know when they have all the tonsil removed. Our specialty, as far as tonsil operations are concerned, has practically dwindled to removing tonsil stumps. Unless we learn to dissect stumps with the capsules intact we will also lose this field of work.

Many doctors who use the Beck or Sluder know they leave a stump but relieve their consciences by grabbing the stump with a forceps and throwing a snare around it, thus again allowing the snare to do the thinking for them. This does not remove the stump completely. The only way to remove a stump is to find the capsule and dissect the stump with its capsule.

I have had my tonsils operated on four times. Once by Dr. E. F. Ingals with a tonsillotome. Twice by Dr. O. T. Freer who used sharp knives to cut pieces off. The last and fourth time by my former assistant, Dr. Louis Schultz, who dissected the stumps with their capsules. Not until then was I relieved of repeated attacks of sore throats and rheumatic symptoms.

Dr. Sluder invited me to come to his clinic in St. Louis to operate on tonsils. We operated on five cases in children. Gas anesthesia was used and the gas was not continued after the operation started. I removed the right tonsil by dissection and he removed the left with his guillotine. After we had finished the five cases we laid the tonsils out for examination. Dr. Sluder put his arm around my shoulder and said, "Dr. Good, never take up my operation as your dissection is better than my operation." I have used the Sluder about 700 times and I can verify that his advice to me was correct.

There are many satisfactory ways for dissecting a tonsil but we have made a movie of a method which has proved very satisfactory in our hands. A brief description of the operation is as follows:

The author's tonsil forceps (Figure 1) is powerful,

Fig. 1. Author's tonsil forceps.

due to the short shank. This forceps is introduced closed between the anterior and posterior pillars at the highest point. It is held at almost right angles to the surface of the tonsil. The forceps is now opened about one half inch and pushed out and forward against the ascending ramus of the jaw and then closed. The upper lobe of the tonsil is pulled out of its socket. This method of grasping the tonsil takes hold of the capsule and prevents the forceps pulling out in fragile tonsils.

With a curved beaked knife (Figure 2) an incision is made through the anterior pillar near the tonsil margin but not at the margin and continued around the upper pole and along the posterior pillar. The capsule which is now exposed is dissected free from the pharyn-

geal areolar connective tissue down to the tonsillo-pharyngeus muscle.

A new hold is now taken with the tonsil forceps, the grasp being just at the tonsillo pharyngeus muscle, which enables us to pull out the lower lobe after this muscle is cut with scissors. The author's tonsil scissors

Fig. 2. Author's tonsil knife.

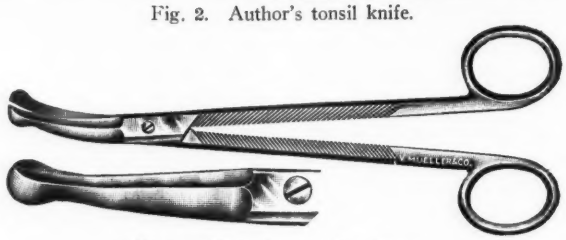

Fig. 3. Boetcher-Good scissors.

(Figure 3) now cuts the muscle and one is surprised to find that the scissors can now drop into a deep cavity opposite the lower lobe.

With closed scissors the lower lobe is dissected. The tonsil knife must frequently be used to complete the dissection of the lower lobe. Robertson's pillar knife is often employed to dissect the pillars all the way down.

The snare wire is now looped over the tonsil with the tip of the snare held below the base of the tonsil. As the snare is contracted the point of the snare is pushed down and outward and the tonsil pulled up and in with the forceps.

If the snare is applied as described in books it is very apt to engage at the depression between the two lobes where the tonsillo-pharyngeus muscle is attached and leave the lower lobe behind. Part B of the movie on the cadaver illustrates this error of the snare and the dissection of the stump proved the stump to be as large in size as the upper lobe.

Another important point is that the uvula can never be caught by using the snare as illustrated above.

I had a minister from Kankakee, Illinois, who had seven children. All had had their tonsils removed by the same general surgeon. Four of the seven consulted me for other troubles and all of those four had had their uvulas amputated.

My plea and purpose of this article is to have Otolaryngologists come back to the dissection method and have every step in the operation under control of the eye. To do this one must have an operating light with parallel rays of light in direct line with the eyes. This often eliminates the use of tongue depressors as one can see clearly through a small field and the tonsil forceps is usually all the depressor necessary.

The Kierstein head-light for thirty years has been a good paralled-ray light but not as bright as it should be. The Good-Lite is fifteen times brighter and throws 1000 lumens of light.

Space will permit describing only a few of the many cases with tonsil stumps:

Case 1. Miss K., aged 26 years, referred to me by Dr. Helm. This patient had consulted Dr. Tice and Dr. Tieken who both advised that she go southwest for her health. These were no findings of tuberculosis but on account of her weakened condition they thought the climate there would help her to recuperate. She had lost fifteen pounds in weight and was unable to continue her stenographic work. She had a throat cough and pains which radiated to her ear and down the neck.

On examination I found a fistula in the anterior pillar on the left side of her throat which had a red granular margin. It measured about 3 mm by 1 mm. There was considerable scar tissue between the pillars from a former tonsillectomy. A distinct stump could not be seen but knowing that stumps are always found behind scar tissue. I enucleated the stump. In a month she was perfectly well, had regained her appetite and weight and has been back at her position ever since.

Case 2. Mrs. H., aged 55 years, the wife of a prominent surgeon in Chicago. This patient consulted me on account of arthritis, having painful joints of about six weeks duration.

On examination I found tonsil stumps on both sides, large but submerged and covered with scar tissue in two places. The tonsils were hyperemic. Rheumatism had followed an acute sore throat two weeks before the onset of acute arthritis. These tonsils had been amputated twenty years prior to her consulting me, but not finding any other focus of infection I advised enucleation of the stumps. One month after the operation all symptoms of the rheumatism had vanished.

Case 3. Mrs. M., aged 35 years, had had her tonsils clipped by a surgeon but continued having sore throats and radiating pains as well as muscular pains. She was not able to do her house work and had lost considerable weight. Her surgeon could not see a stump but referred her to a specialist who was unable to see any stump. She finally consulted me.

On examination I found a large mass at the base of the tonsil fossa covered by the anterior pillar. This area was injected and there was a small fistula in the

anterior pillar near the tongue. I invited the surgeon to witness the operation as he thought there was no tonsil. I found the capsule of the stump and enucleated it. It measured 12 mm by 20 mm and it was evident that the entire lower lobe of the tonsil had been left in. The surgeon stood in astonishment. He carried the tonsil to the window for examination, evidently thinking I must have removed the liver.

Case 4. Mr. W., aged 30 years, called me to the Arms Hotel. He complained of not feeling well and having a slight disturbance in swallowing with loss of appetite and general apathy. He was up and about with no temperature but had not felt well for two months.

On examination of the throat I saw a large scar in the palate above the pillars and involving the pillars as well. No stump could be seen but the palate had a hardened feeling, even more so than a stump would feel behind the scar tissue. Knowing there is always tonsil tissue behind a scar I advised operating. He replied that he had had his tonsils removed but I assured him that there was still a very large tonsil there so I operated. As soon as I exposed the capsule and dissected it for about an inch, I came into a walled-in abscess with very thick creamy pus. This was a quiescent peritonsillar abscess. The entire tonsil stump when enucleated measured 30 mm by 15 mm. His recovery was uneventful.

Case 5. Miss B., a nurse in training, was confined to bed for six weeks with acute arthritic rheumatism. She had been seen by no less than fifteen physicians of the staff without finding the focus of infection. The superintendent of nurses finally called me in.

On examination of the throat no tonsil stump could be seen but there was a marked redness of the anterior pillar where it joins the tongue. On careful examination a small fistula was seen in the anterior pillar. On account of the fistula I knew there was a tonsil stump at the base of the tonsil fossa and I advised operating. By finding the capsule and enucleating the stump I removed a mass of tonsil. It was a little more than half of the lower lobe of the tonsil. She made an uneventful recovery.

Case 6. Mrs. P., aged 30 years, referred to me by Dr. Anderson. On examination I found a large scar in the region of the upper lobe of the tonsil, involving the anterior pillar. Between the pillars could be seen tonsil tissue without scar formation. Her health was poor, she had lost weight and appetite as well. Her tonsils had been clipped seven years before and since then she had had four attacks of peritonsillar abscess and many sore throats.

I removed this stump with great difficulty on account of the large scar. The mass was the full length of the tonsil and about 12 mm wide.

Case 7. Myself. While doing work in the Lying in Hospital I contracted acute follicular tonsillitis followed by acute inflammatory rheumatism. After recovery Dr. E. Fletcher Ingals clipped off my tonsils with a tonsillotome. I continued having frequent attacks of sore throats and rheumatic symptoms. Dr. Otto T. Freer cut off a piece of tonsil from each stump with a sharp knife. My sore throats continued so I went back to Dr. Freer and took my tonsil forceps with me. He examined my throat and said there were no tonsil stumps so I kindly asked him to cocainize my throat. Then I asked him to take the forceps and grab the tissue between the pillars and pull, which he did and he replied, "My God, Good, you have got stumps." Then he proceded to cut another piece from each stump. My sore throats appeared regularly thereafter for four years and I was not relieved until Dr. Louis Schultz, my assistant at the Chicago College of Medicine and Surgery, dissected the stumps with their capsules.

We could enumerate many similar cases with equally good results so that we should know that if tonsils need removing they should be dissected with their capsules, leaving no tonsil tissue. Unless this is done in the future I would advise much more conservatism in tonsil operations.

SUMMARY

1. The great majority of all tonsillectomies leave tonsil stumps.

2. A diseased tonsil stump is more pathologic because crypts become covered with scar tissue.

3. The improvement in health after enucleation of tonsil stumps is more pronounced than in tonsillectomy.

4. Unless the capsule is removed with the stump the patient may not be relieved of symptoms.

5. The only way to remove a stump completely is to find the capsule and dissect it with the stump.

6. When a patient has symptoms of focal infection which cannot be located in any other part of the body and the patient has had a tonsillectomy, it is time to examine for stumps.

7. Fistulae and hyperemic areas on pillars or base of tonsil fossa are frequently due to buried tonsil stumps.

8. Scar tissue between pillars or in the palate nearly always means that there is tonsil tissue back of it.

9. The tissue between the pillars or behind the scar tissue must be grasped and pulled out to make a positive diagnosis.

10. Peritonsillar abscess occurs more frequently with tonsil stumps and is more difficult to diagnose.

11. For dissection a parallel-ray operating light is necessary.

DISCUSSION

Dr. Louis Schultz, Chicago: Being in full accord with the essayist, I find it difficult to discuss his paper. For a discussion usually brings out viewpoints differing with those expressed, hence my handicap, since I have been following the author's technic for years with very satisfactory results.

A complete extirpation of tonsils often yields most brilliant and lasting results. But this statement can be appreciated only after a real tonsillectomy or after remaining stumps left from a previous operation, "tonsils which have grown again," have been completely enucleated.

That temporary improvement is sometimes recorded by the patient after a partial tonsillectomy is a fact, but this is often followed by an aggravation of the primary symptoms.

The article by Fowler and Todd, mentioned by the essayist, not only impressed me on reading it, but changed some of the anatomic conceptions I had with reference to the tonsils and their relation to the surrounding structures. Following the general teaching, I, too, thought in terms of a capsule forming the bed for these glands in the tonsillar recess. But, as Fowler and Todd pointed out, one would not expect to find a muscle ending in a capsule. Yet this is a fact. Some fibers from the palato-pharyngeus do end between the upper and lower lobes of the tonsil; but instead of ending in a capsule these fibers end in the sheath of the muscle mentioned, a sheath composed of loose areolar tissue, hence providing easy injection and easy dissection of the upper lobe of the tonsil. These authors also show that the superior constrictor does not enter into direct relationship with the glands under discussion, for the palato-pharyngeus with its sheath forms the bed with the exception perhaps of that small portion where the palato-glossus lies in relation.

A point I wish to emphasize in connection with the dissection of the lower lobe is that, if possible, more care should be exercised than in the dissection of the upper lobe, for the palato-pharyngeus is thinner below the so-called tonsillo-pharyngeus than above and so is its sheath thinner, also the glosso-pharyngeal nerve lies in close relationship.

An outstanding point made by the essayist, which I, too, wish to emphasize, is the importance of good illumination when doing a tonsillectomy; since the same principles applying to general surgery apply here. No doubt we all appreciate that blind surgery is not the ideal type. I am of the opinion that the poor results we often find in tonsil as well as nose operations are due to poor illumination, and up to the time that Dr. Palmer Good perfected his light, good and safe illumination, in the nose at least, was practically impossible. I still have my Killian light, a relic of bygone days; yet in those days I wanted a light, the rays of which are parallel with the line of vision. Such a light, once adjusted, remains so, thus adding to the ease of the operator and to the safety of the patient from the standpoint of contaminating one's hands during the operation. The use of this light has rendered my work easier and I conscientiously believe that I am giving my patients better service.

Finally I used to do tonsillectomies, if under local anesthesia and if the weather was fair, by direct daylight by seating the patient close to and facing the window. I am not using this method any more, because, with this light, it is so much more simple to operate than by any other method I know of. In conclusion I wish again to place emphasis on the fact that good illumination is as essential in the enucleation of tonsils as it is in doing of any other good surgery.

Dr. Austin A. Hayden, Chicago: I can agree, I am sorry to say, with only a very small amount of the material that Dr. Good has presented. I am thoroughly in accord with his emphatic statement that a successful tonsillectomy consists in removing all of the tonsil and leaving all the throat provided complete hemostasis is secured.

Spraying the entire throat with cocaine solution is dangerous—from absorption as well as swallowing. I agree thoroughly with Dr. Good in his statement regarding the high percentage of tonsil stumps remaining after operation. If cases were kept under observation longer immediately after operation, much if not all of the fault could be avoided by removal of remnants that escaped detection at the time of operation. Statements regarding stumps must be made most cautiously if the original operator is to be spared the possibility of legal action. The patient is entitled, on the other hand, to an honest opinion as to whether or not the tonsils were removed.

Dr. R. H. Good, Chicago (in answer to questions from various parts of the room):

Question: What percentage of adrenalin is used?

Dr. Good: Eight drops to the ounce fresh adrenalin for injections.

Question: What strength is used on tampons?

Dr. Good: Five per cent. for spray. I am opposed to tampons.

Comment: I have used cocaine in adrenalin 1:1000, for thirty years.

Dr. G. S. Duntley, Macomb: I have used 2 per cent. mercurochrome in the tonsil fossa with pleasing results, and the next day I have observed an exudate more firm and fibrous than with anything else I have used. Iodine on account of the alcohol has seemed to me to increase the post-operative hemorrhage and I have discontinued its use and have used mercurochrome with very satisfactory results.

Dr. R. H. Good, Chicago: I thank Dr. Schultz and Dr. Hayden for their discussions. Dr. Schultz has been my assistant for nine years and has always used the parallel ray operating lamp. He uses it for his cleft palate work and it is wonderful for this field.

Dr. Hayden says that a cocaine spray is very dangerous. I have used a cocaine spray in the throat over five thousand times and have never had appreciable toxic effects. I have used cocaine mud in adrenalin 1:1000 in the nose for thirty years, and then the

Committee on Local Anesthesia came out with their report that it was a dangerous practice to use cocaine mud for application. My experience does not tally with the report of the Committee. If I had had any deaths I would be willing to accept their advice. I want to say frankly that if any of my patients come to the office of any of you and you find a tonsil stump, I do not ask you to protect me, but protect the patient. If he has a stump, tell him, and remove it, but do not try to remove it unless you find the capsule of the stump.

Now about the head mirror: Dr. Hayden speaks about the head mirror having a focus at a certain point. Some have the point at 8 inches, some are 10 inches and some are otherwise. They all have a focus. When you are operating in the throat, your reflecting light has to be here, your patient is here, and you are here (indicating) but if your patient turns his head or you have to change your position or a nurse is holding the light, as it used to be years ago, and when one intern came in the light went up, if another intern came in it went still higher, and all the time you are fiddling around in that throat, with uncertain illumination.

Dr. Hayden has never used the light. I have preached to my son for ten years that specialists need more and better light. Even a poor operator can operate much better if he can see. The head light that my son has devised throws parallel rays, every bit of this beam of light is focused for any part of the operating field, and that is better than a beam of light focused on one spot as you have with the head mirror. For the nose, for instance, with your head mirror you can see very well at the focal point but beyond that point no light goes except as reflected from the tissue in the nose. But with this light it is different. The beam goes straight back as far as you want to go, and your sight for operating is perfect anywhere, so long as you have a space in the nose to see through. The eye is exactly in the center of the straight beam of light and is focused everywhere and you can operate on any part of your field as well or better than just in the focal point of the head mirror.

Dr. Ingals used to say that the proof of the pudding is in the eating. If Dr. Hayden once used this light he would find it makes his operating on nose and throat much easier. When you want to do intranasal work on the frontal sinus, the tear sac or the spenoid, you want to be able to see.

As to scar tissue, I want to make this emphatic. Lymphatic tissue heals with scar tissue, muscle tissue much less so. Dr. Hayden said when the posterior pillar is cut you have scar tissue. You do have scar tissue, but it is limited to the posterior pillar. But when you have scar tissue from a stump you have scar between the pillars, or a scar here, and sometimes you find the scar extending up onto the palate. I have never yet seen a case without a stump back of that scar. I can only speak from experience. If you take hold of any of these scars between the pillars or on the palate and pull that scar out, you will find a ball of stump behind it. I have had cases that physicians have looked over and specialists have looked over, and they could not find any stump with any kind of light because that stump was buried or it was behind the scar or anterior pillar. The only thing to do is to cocainize the throat and grasp the scar tissue and pull.

Another thing you may see in a patient who comes to the office is a bleb formation on the anterior pillars, blebs as large as 2 or 3 pin heads. Watch carefully to see if there is not a fistula underneath that. A patient came to my office several months ago with blebs the size of 3 or 4 pinheads, and she said that whenever the bleb is there she had rheumatism in the right leg, and when the bleb breaks open the rheumatism disappears.

So I want to bring home the importance of the tonsil stump. We have patients coming every day who may have them, and we do not look for these stumps because the patients say they have had the tonsils removed.

Dr. Austin A. Hayden, Chicago: Dr. Good made the remark that he knows nothing about the head mirror. I have suspected that for a long time, but never had his own statement to that effect. I have been going to use Dr. Good's head light for some time, but I have not got around to using it, largely because the current is D. C. But since they are now able to use them with any current, I am going to avail myself of his generosity, and am going to emphasize his generosity in this time of depression. I am making a counter proposition, however, that he familiarize himself with the ordinary head mirror at the same time.

Dr. R. H. Good, Chicago: Dr. Hayden misunderstood me. I have never used the head mirror for operating. I have used it in the office, but never for operating, because in my opinion, it was not any good for that.

Dr. Austin Hayden, Chicago: Dr. Good's experience with cocaine is of course at variance with the report of the Committee of the American Medical Association, as he said. It seems that their findings were very different, and that the work they did was extremely valuable.

Dr. R. H. Good, Chicago (closing): This Committee obtained the reports from all over the country, and the Lord only knows how cocaine and adrenalin was used throughout the country. I never use cocaine separately, I use it in adrenalin, and I simply make two applications to the surface I want to anesthetize, waiting two or three minutes before the second application. I think that if you apply cocaine just by putting it on, instead of packing the nose, you secure the result you want without ill effects. I have not had any occasion to go back on this method. I have to go by my experience, and I would not substitute anything else until I find I am wrong.

IS HAY FEVER A PUBLIC HEALTH PROBLEM?*

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Hay fever as a public health problem is of vital importance, but is seldom discussed. It is the purpose of this paper to point out some of the outstanding facts about pollen and its relationship to clinically sensitive individuals and to show that this problem is one which should interest the Public Health Officer.

Some Characteristics of Pollen. It has been indisputably established that pollen is the causative agent of hay fever. Pollen may be defined as the fine, dust like, powdery material developed within the flowers of seed bearing plants (angiospers). The method of dispersing pollen is known as pollination, of which there are four recognized methods. The one which concerns us in this paper is that of wind pollination, where the transference of pollen from the anther sacs to the stigmatic surface of the pistil is dependent upon the wind. The outstanding characteristics of this method of pollination is the production of large quantities of buoyant pollen.

To illustrate the large amount of pollen which wind pollinated plants produce, we cite the following: Thommen[1] estimated that one short ragweed (Ambrosia elatior) plant produces approximately one million million pollen grains. Scheppegrell[2] estimated that an average large bush (3 feet 10 inches) of the bastard feverfew (Parthenium hysterophorus) generated approximately 227,000,000 pollen grains per day. The same author estimated that a giant ragweed (Ambrosia trifida) was capable of producing eight billion pollen grains in five hours, and that a field of grass during its active stage of pollination, produced about eight million pollen grains per square foot of surface.

Koessler and Durham[3] in 1925, in a pollen survey of Chicago, estimated that a city block of ragweeds, about 1/10th acre, produced 100 ounces of pollen per season, or 60 pounds to the acre. They believe that the actual production of pollen is often greater than this, and conclude that hundreds of tons of ragweed pollen are suspended in the air over Chicago in a single day during the height of the season.

The second characteristic of wind carried pollen is its great buoyancy. This has been demonstrated repeatedly by various observers. It has been definitely established that the ragweeds and many other wind pollinated plants pollinate from sunrise to about 10 A. M. During this time, there is usually a rising temperature, creating convection currents upward, which carries large quantities of pollen into the higher strata of air. Here the pollen may float for long periods of time and for long distances.

As an illustration of its great buoyancy we cite the following: Hesselman[4] exposed prepared petri dishes on lightships, and collected 395 pollen grains per square inch per day at 18.6 miles from shore, and 215 pollen grains per square inch per day at 34.1 miles. Several years ago, in our routine exposure of pollen slides, we observed elm pollen, fully two weeks before this tree bloomed in our locality. Investigation brought out the fact that this tree was in bloom about 200 miles south of Chicago, and the pollen had been carried for that distance, probably in the upper strata of air, and been precipitated by cooler air currents in our locality.

Pollen showers out of season, have been recorded, which can only be explained by the great buoyancy of pollen. Riley[5] reported that in St. Louis in March 1873, during a thunder storm, a certain section of ground was sufficiently covered with pollen to give the appearance as though it were sprinkled with sulphur. This was a tree pollen, then pollinating in the south, and which had been carried over 400 miles.

Many studies have been made on the altitude at which pollen may be found. Grass pollen has been gathered as high as 17,000 feet. In many of these observations, the amounts of grass and ragweed pollen collected between 4,000 and 6,000 feet was greater than nearer the surface.

Pollen Seasons and Distribution. Hay fever can be grouped roughly into three seasons: 1 spring, due primarily to the pollen of trees, and extending from April to June; 2, summer, with the grass pollen as the principal cause, extending from early June to the latter part of July; and 3, the fall season, due to the pollen of weeds, and extending from the middle of August to frost. There is a certain amount of over-

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lapping of the seasons, and the onset and extent of the seasons vary somewhat in different localities.

As regards the toxicity of the various pollens, it is most fortunate that trees which produce great amounts of pollen, with very few exceptions are relatively innocuous. The most toxic of the trees is the mountain cedar, found in Central Texas, and pollinating in December and January. This is, however, only of local importance. Clinically, sensitivity to tree pollens accounts for less than 2 per cent. of the total number of cases of hay fever. The trees which are of greatest importance in Illinois are, maple, elm, oak, and cottonwood.

The pollens of the grasses are more toxic than those of trees, and approximately 20 per cent. of our cases fall into this group. The chief offenders in this group in the middle west are timothy, red top, june grass, and orchard grass. These forage grasses can be classed agriculturally into meadow grass, including timothy and orchard grass, and pasture grass, represented by june grass and red top. In the middle west timothy is cultivated extensively for hay, because of its ease of adaptability to various soils and climates, its abundance of seed production and low cost. Orchard grass makes a good hay, but it is not as easily adaptable as timothy. There are approximately one million acres of the latter under cultivation in the middle west. June grass along with red top, makes ideal pasture grass and is extensively used in lawn mixtures. When used in lawns it is usually not permitted to pollinate until late in the fall and may account for some symptoms at that time.

The relative ability of grasses to produce pollen is less than that of the ragweeds, and their pollinating season is shorter.

The pollens of the fall group are by far of greatest importance as toxic agents in the production of hay fever. In this group are the ragweeds, short (Ambrosia elatior) and giant (Ambrosia trifida), the chenopods, ivas and the amaranths. About 80 per cent. of hay fever sufferers react clinically to this group.

The distribution of these noxious weeds is of interest. Durham[6] has conducted a national ragweed survey for the past four years, in which he shows very graphically the relative amounts of pollen produced in the various cities studied. It is of interest to note that the maximum amount of ragweed pollen both as to highest peaks for various days, and as to total for the season, occurs in the Great Lakes region and middle west. The cities reporting the highest counts were Indianapolis, Buffalo, Omaha, and Kansas City. The Atlantic seaboard and the Pacific coast showed only a moderate amount, while Mexico and Canada have relatively low counts. Ragweed may be said to be universal in the United States, with only a few local exceptions. It is extremely toxic and apparently only small amounts are necessary to precipitate symptoms in a sensitive individual. Patients manifest symptoms on days when the concentration of ragweed pollens is as low as 25 pollen grains per cubic yard of air, measured by the gravity method.

With its wide distribution, its enormous production of buoyant pollen, the control of weeds from the standpoint of public health is of the greatest importance.

Clinical Aspects. There are several clinical facts which have a distinct bearing on hay fever as a public health problem.

1. Incidence. It has been variously estimated that from 1.5 per cent. to 4 per cent. of the population in this country suffer in some degree from hay fever. Based on a total population of 120,000,000, we have roughly between two and four million sufferers. As stated above better than three-quarters of this number react to the fall group. The number of cases have increased in the last decade. This increase is both apparent and real. The apparent increase is most likely due to greater knowledge about the condition among the laity as well as among physicians. The real increase is due to greater distribution of weeds in habitable areas. Ragweed seems to thrive most luxuriantly in areas where the ground has been turned or cultivated, and is to be found in abundance in and near habitable regions, roadsides, vacant city lots, subdivisions, etc. There has also been an increase in the exposure to the toxic effects of weeds, due to our increased facilities of transportation, chiefly the automobile. Certainly if one out of every thirty, suffer annually from hay fever, and the number is increasing, the problem is one which should interest the Public Health Officer.

2. Heredity. That heredity plays an important role in allergic disturbances cannot be dis-

puted. Spain and Cooke[7] showed a positive antecedent history in 58 per cent. of clinically hypersensitive individuals. Other authors are in general accord with these findings. It is interesting to note that in instances when there is a bilateral family history of allergy, the onset of symptoms was earlier than in cases with a unilateral family history.

3. Age of onset. In a review of 856 hay fever cases which we observed the last two years, it is interesting to note that 30 per cent. began under the age of 10; 23 per cent. from 10 to 20 years; 25 per cent. from 20 to 30 years; 16 per cent. from 30 to 40; 4 per cent. from 40 to 50; and 2 per cent. after 50 years of age. In other words 66 per cent. had their first symptoms under 25 years of age. These individuals begin their lives with a great handicap, one which, with the exception of very few, will last throughout life.

4. Asthma. Asthmatic seizures occuring with hay fever should be regarded as a distinct form of pollen sensitivity, rather than as a complication. Thommen[1] states that pollen asthma occurs in 35 per cent. of hay fever subjects in and around New York. In our survey in Chicago, we found 40 per cent. Some authors give higher figures. Asthma usually develops after several seasons of hay fever; at first terminating with the hay fever season. However, with succeeding years the tendency is to last longer and in many instances terminates in a perennial bronchial asthma, of varying severity.

5. Economic considerations. One can readily see, that patients who suffer annually for periods of from one to six months depending upon their sensitivity, from a condition which is as annoying as hay fever and pollen asthma, are not only a burden unto themselves but to their fellow men. Their personal efficiency is greatly reduced, they become as a rule irritable, and often disinterested in their daily affairs. Many are forced to give up positions and seek relief in pollen free resorts. Those that try to remain at their daily tasks, are often so hampered, that they are more of a liability than an asset to their employer. No estimate can be made of the financial loss annually due to this condition. Hay fever as regards morbidity is perhaps as great an economic problem, because of its annual recurrence, as any other single disease, exclusive of epidemics.

The Prevention of Hay Fever. In preventive medicine, no disease of serious importance has received so little attention as that of hay fever. It ranks as one of the most common of the non-fatal diseases, yet very little has been done in the removal of the cause. The first step is the education of the public in the responsibility of pollen of weeds as the causative factor. The identification of the various weeds and plants that may develop hay fever is of utmost importance, but this will follow the establishment of the etiology.

The education of the public to the relationship of noxious weeds and hay fever, will result in having such weeds considered from a new point of view. If the leverage of public opinion can be changed, legislation will be simplified. In a communication from Dr. Rupert Blue, then Surgeon-General of the U. S. Public Health Service to the American Hay Fever Prevention Association several years ago, this view was expressed as follows: "It appears that the most practical method of securing the cooperation of the public would be by education as to the effect of the presence of these weeds in communities from both health and economic standpoints."[2]

Destruction of weeds causing hay fever is not of as recent origin as the attempts to eradicate the causes of typhoid fever, malaria and many other diseases. Farming has been a necessity since time immemorial, and during all these years, weeds have contested the efforts of the farmer. The weeds which cause the greatest distress to hay fever subjects because of their adaptability to tilled soil, are among the most persistent enemies of the farmer and gardener.

So important is the subject of weeds and their extermination from the farmer's standpoint, that the various State Departments of Agriculture have devoted much time to this subject. The following excerpts from an article on weeds by H. R. Cox, Agriculturist of the office of Farm Management, presents the subject from the agricultural as well as the public health point of view.

"In a sense, farming might be called a warfare against weeds. . . . So powerful are weed enemies in reducing crop yields, while at the same time multiplying labor that the farmer should at every turn strengthen his position against them.

"The importance of keeping weeds in subjection cannot be emphasized too strongly. It has been shown in experiments with corn made by the Department of

Agriculture that weed eradication is the principal, if not the only beneficial result of cultivating this crop after planting. . . ."[2]

From an agricultural standpoint, the fight against weeds has been of so great importance that laws have been enacted to control them. In most instances, success has attended these efforts, and the weed stamped out.

Weed ordinances as they now stand are wholly inadequate to cope with the problem from a public health standpoint. In Illinois the statutes speak only of noxious weeds in their relationship to agriculture. Nothing is stated of their relationship to health. To quote from the Illinois statutes ch. 5, par. 83:

"Noxious weed seeds are defined as the seeds of buckhorn, field sorrel, Canada thistle, quack grass, docks, ox-eye daisy, dodders, wild mustard, Johnson grass and wild carrot,"

and further in ch. 18, par. 1,

"For the purpose of this act,—the term 'noxious weeds' shall include Canada thistle, and sow thistles."

Several town ordinances include Barberry as a noxious weed. The ordinance of the city of Evanston has a paragraph which touches upon the matter of noxious weeds as related to public health. It could well serve as a model for other ordinances along this line. To quote par. 1861,

"No owner, lessee, occupant or agent, servant or employee of such owner, lessee or occupant being in control of any lot, piece or parcel of land within the City of Evanston shall knowingly allow, permit or maintain on such lot, piece or parcel of land, any growth of poison ivy or other noxious weeds or plants, whereby the health of the public, or of any person, lawfully upon or passing by such lot, piece or parcel of land may be endangered."

Under such a provision weeds, such as ragweeds, which are of far greater importance to the health of the community than those now classed as noxious are to agriculture, could be eradicated by unified and concerted efforts on the part of local, state and federal authorities.

CONCLUSIONS

In conclusion let us state:

1. Pollen, the causative agent in hay fever and pollen asthma, because of its abundant production, its buoyancy and wide distribution is a distinct menace to public health.

2. Hay fever with its increasing incidence, its hereditary tendency, its appearance in childhood and youth, its usual persistence throughout life, its asthmatic phase and its economic loss, should be looked upon as a public health problem.

3. To date the solution of this problem, has been in the hands of the medical profession with very little aid from other sources.

4. Valuable help can be given by the Public Health Officer in the education of the laity to the facts of the problem.

5. Eradication of hay fever producing weeds can only be accomplished by unified and concerted efforts of local, state and federal authorities.

636 Church Street, Evanston, Ill.

DISCUSSION

Dr. Ralph McReynolds, Quincy: Dr. Nelson has given us a very instructive and interesting paper on a most important subject. I think more good can come out of the suggestions that Dr. Nelson has made in this paper than probably any other paper that has been given to the Illinois State Medical Society at this meeting. The suggestions which he has made for results should not only be listened to but should be acted upon.

Dr. Nelson and I may disagree a little bit on one point; that is, regarding what he said about the automobile traffic, that we have more automobiles today, that the people get out more into the pollen, and that as a result they suffer a great deal more on that account. I believe they suffered just as much during the time when we had the old horse and buggy, because we didn't have the hard roads then, and we not only had a great deal of pollen but we had more actual dust to breathe when out upon these dusty roads than is the case today.

It may seem to be rather an insurmountable obstacle or a great task when we come to consider how sensitive many hay fever victims are to the pollen, the large amount of ragweed, the great amount of pollen that is cast off and the long distance which the pollen is carried. However, I believe that many hay fever victims can withstand a little or a moderate amount of pollen without having any great discomfort. In support of this belief, in the year 1930, which was a particularly dry season, if you remember, we had much less suffering from hay fever than we do ordinarily. Further, a number of years ago, when several of my friends and I were in Northern Michigar. to get relief from hay fever, we noted repeatedly that we were practically free from hay fever symptoms at Petoskey but at Walloon Lake, a distance of only about seven miles, we were not. The point is that at Petoskey, while there is pollen there, it did not exceed our tolerance.

Very little has been done to solve the hay fever problem in a big way. I am fully cognizant of the great work that has been done by the allergists on desensitization, and the very fine work that Dr. Nelson and others have done in removing pollen from the air, but the great mass of people that are suffering have neither the time nor the money to take active treatment. Furthermore, those of you who have done any of this type

of work know that the majority of these people are not sufficiently cooperative. You have to be a super-salesman to get them to carry on this treatment year after year. When you have some three million people suffering for weeks, not to mention the complications and the economic side of it, it is high time we were actually doing something in a big way. And I certainly agree with Dr. Nelson when he says that the way to get at this problem is to properly educate the public and carry on a campaign similar to what has been done to eradicate or at least reduce many diseases like typhoid fever, smallpox, malaria, yellow fever, diphtheria and other diseases. I feel that public health officials are the ones best equipped to sponsor a campaign to eradicate noxious weeds which cause hay fever. Certainly we should have the cooperation and the assistance of the medical profession in general and particularly the allergists, and the patients themselves, to eradicate the chief offender, the ragweed.

Dr. I. D. Rawlings, Chicago: I would like to know if either the essayist or the discussant knows of any places that are absolutely pollen-free, or almost so, where hay fever victimes can find relief. I would like to know of such places, if they are definitely known. I have been asked dozens of times during my years of service with the Chicago Board of Health where hay fever patients shall go to find relief and I never know exactly what to tell them. I don't know whether Petoskey is the best place or not. We used to think that it was, but I am not sure now that it is.

Dr. Nelson, in closing: I will answer Dr. Rawlings' question first. There are several places in the country that are pollen-free, as far as ragweed is concerned. There is only one large city in the country that has no ragweed and that is Seattle. However, some hundred miles up in the Rockies, for example, in and around Missoula, you are free from ragweed. In Colorado, there are places but you have to go way up into mining camps, high up, and those places are hardly fit for human beings to live in. There is where we have pollen-free areas. As far as Petoskey is concerned, and Mackinac Island, when the wind is from the South, they sneeze just as much in Mackinac as they do in Chicago. Pollen is carried over onto the island itself. They keep the ragweed pulled out on the island, and that is of course a favorite resort. In Canada; most of the pollen we find in the southern area of Canada,—and if you are interested, we have some graphs from Canada over at our exhibit,—is blown in from the United States. There is in Canada about sixty miles north of Port Arthur a valley in which the ragweed grows very luxuriantly, and you have to go north of that point, almost to the southern tip of Hudson Bay, to get away from ragweed pollen. Those are about the only places north. Of course in Mexico they can get relief, as also in Europe, where they do not have ragweed, and where all they have is the so-called summer season, where rye is the chief offender.

Dr. Rawlings. What about a lake trip?

Dr. Nelson: That is temporary. We can do exactly the same thing with air filtration in the home, such as we pointed out in our article a week ago in the Journal, A. M. A.

In reference to the point Dr. McReynolds' brought up about modern transportation decreasing the amount of pollen a person comes in contact with as compared with transportation years ago; I do not agree with him. I feel that in the days when we used to be able to travel six miles an hour in a buggy, the roads were dusty, but I feel in these days, when you can travel sixty miles an hour and cover ten times as much distance, you are going to pass ten times as many ragweed plants and ragweed patches, and I think you get more pollen. At least that is the consensus of opinion of the men doing this type of work throughout the country.

Locally a great deal has been done by cutting the weeds, but they must be cut before they pollinate. It is utter folly to send a group of men out cutting weeds beginning August 10 or August 15. If you do that you are going to have what we found in Chicago about a year ago. When they became over zealous about ragweed on the West Side, a group of men were sent out to cut weeds, after they had begun to pollinate, and we had six men at the University of Illinois who came in with hay fever that never had had it before. They had been potential hay fever victims, and the tremendous amount of pollen inhaled while pulling these weeds precipitated the attacks. Ragweed should be pulled in July. This should be a matter of education.

There has been some local eradication of weeds. Scheppegrell mentions several areas in the Southwest. Education will help, as far as the public is concerned; in the same fashion that the public health officials have worked with other conditions. You have had to educate the public, and made them toxin-antitoxin conscious. You have had to educate the public as to pure water supply and many other factors which enter into a public health program, and the same can certainly be done with ragweed and our fall plants in the same way. It can be done through the schools; through women's clubs, through your service clubs in the various cities, as the Rotary, Kiwanis and Elks. They are willing to help, and I believe, if you get a public health program for the eradication of the causes of this condition, and educate the public as to what actually causes hay fever, and teach them what to do, I think you will see some very startling results. I thank you.

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PHYSICAL EXAMINATION OF THE CHILD*

Its Objects and Methods

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Malnutrition is a relative term, well understood but difficult to define concisely. It refers to *interference with the proper building up of body tissues, and liberating of energy.* Proper nutrition is accomplished by five main processes; Ingestion, Digestion, Absorption, Assimilation and Excretion. Inadequate function of any of these processes may cause malnutrition. Obviously we are mainly concerned with quantitative and qualitative inadequacies of the first group, ingestion; not enough food, or not proper food.

How Is Malnutrition Recognized? The prevalent custom of weighing and measuring a child, glancing at a weight and height chart of the proper age and then telling the parents that the patient is undernourished or all right should be condemned as inefficient and many times grossly inaccurate.

Some striking pictures of malnutrition are often seen where weight is proper for age and height due to starchy diets, high in calories. The malnourished child presents poor turgor, or flabbiness of muscle tissues, poor color of skin, listlessness, irritability, poor posture, lack of alertness or even seems retarded mentally; may show marked fatigue upon exertion, be restless and unable to concentrate, or sleep poorly; poor circulation; cold hands and feet. None of these can be recognized by the scales or measuring rod, but a child with these present cannot be in a state of correct nutrition (proper building up of body tissues and liberating of energy).

What About Undernutrition? Malnutrition is largely a qualitative term. Undernutrition is largely a quantitative term. Both may overlap, and usually do.

Undernutrition or undernourishment permits of much confusion when the only guides are the weight charts mentioned.

It is perfectly obvious that a child of small parents, small of frame, and small-boned, may be well nourished, even though the figures show it to be well below the "average of twenty or fifty thousand boys, apparently healthy," of that age.

It is just as obvious that a child may have been previously ill for a long time, and had a severe set-back, and yet at the present time be in a good state of nutrition, even though below average figures for weight and height.

Old healed rickets may present a similar condition to the examiner.

Are Age, Weight and Height Charts Indispensable? There should be no misunderstanding about the value of weight and height charts. They are indispensable as guides to all except the most expert examiners; they must however be used as only one index of the child's condition, and if used this way in connection with a proper examination of the child, should help pick out the malnourished and undernourished child. Too much emphasis cannot be placed on whether the child is within the seven per cent. or ten per cent. above or below average.

Rate of Gain or Need of Repeated Check-ups in Some Cases. Certain children who are below average figures, or who are having defects corrected, should be examined at intervals, months apart, to see if *their rate of progress* is satisfactory.

In treatment, we must not forget that we cannot change the type of individual by forcing of food. No amount of feeding will make a draft horse out of a broncho or a cow pony.

Causes of Malnutrition. Before going on to the examination of the child, the following quotation will be interesting:

"The causes of malnutrition are faulty health habits, acute disease, physical defects, especially enlarged or infected tonsils, adenoids, deviated septa and sinus infection, chronic otitis media, carious teeth, eye-strain, syphilis, tuberculosis, chronic overfatigue; nervous excitement in or out of school due to examinations, too much home work, movies, too many outside activities—either mental or social—worry, too little outdoor activity, too little sleep, faulty dietary habits, i. e., tea and coffee, rapid eating, candy and sweets in too large quantities and taken either between meals or before meals, and the substitution of "cakes" for bread which, with coffee, forms the breakfast of the children of many ignorant and poor parents. It has been shown that while poverty is doubtless a cause, parental

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ignorance and shiftlessness are much larger contributing factors."

The Examination of the Child. It has been well said that the most important part of the child's examination is a careful case history. However, for the sake of brevity, we will concern ourselves with the Physical Examination only, omitting the Case History, Laboratory Procedures and Psychiatric Study.

Is There a "Best" Method of Examination? Some highly regarded clinicians who poke fun at the exaggerating mother, who maintains that her well-fed child "will eat absolutely nothing," paradoxically teach their students that this or that particular method or routine of examination is the "best" way.

May we state here that if the clinician has a routine, or procedure entirely "unorthodox," but which elicits the essential facts, and is thorough, then that method is the "best" for him.

Are All Children Examined Alike? The three month old baby may be examined altogether differently from the ten year old boy. The ten year old boy who is calm, unafraid and not anxious or excitable, may be examined in a different routine, and with a different approach than the ten year old who is anxious, excitable and afraid wondering what each instrument is for and "what will it do to me."

The important thing in a physical examination is to have an orderly picture of the information to be sought. It does not matter if this be printed out in detailed "systems" on a card, or printed in the observer's mind; if either be complete, the order of examination (i. e. whether eyes, mouth or chest be first or last) is unessential.

General Inspection Is the First Thing. Practically all agree that general inspection should be first. This may be done in part while getting the history, noting if the child is active, alert, listless, irritable, if he is the same type of individual as his parents or grandparents, what type of posture he has; is he afraid or anxious. The child should be stripped and inspection should include condition of scalp, symmetry or lack of it, of all parts of body, skin, facial expression, eyes, ears, neck for glands, pulsations, etc. chest for respiration and type, vascular changes over chest or abdomen, position of body, inguinal region, genitalia (secondary sex characteristics in older children), and type of movement of extremities. All of this, and other things indicated by above, may be done without even touching the child or disturbing it in any way. Chorea, hydrocephalus, cretinism, adenoids, Mongolism, are but a few of the conditions which inspection alone usually diagnoses, and further examination usually confirms.

Detailed Examination. Height and weight should be recorded. Circumference of skull and chest may be recorded.

The Skin should be examined for color, texture, amount of subcutaneous fat, edema, or any dermatologic lesions. The condition of scalp and texture and thickness of hair should also be noted.

Skull shape and defects, and fontanelles and sutures of infants may next be noted.

Ears should be carefully examined for discharge, and for hearing. An electrical otoscope should be used.

Eyes should at least be checked for discharge, conjunctival or corneal defects, pupillary reactions, strabismus, and nystagmus, even if observer is not competent to check vision.

Nose contour, condition of septum and turbinates, character of discharge if any, and tenderness over accessory sinuses may be observed.

Mouth examination is very important. Condition of mucous membrane of lips and cheeks, and infected or bleeding gums may be noted. Teeth should be examined for cavities, abscess, or malocclusion, after observing moisture and coating of tongue.

Tonsils should be carefully examined for hypertrophy, but more especially for signs of infection. Post-nasal signs of adenoids should never be overlooked. The symmetry of the pharynx is important from the standpoint of abscess or abnormal glands.

In the Neck, the condition of the cervical lymph glands should be noted.

The Thyroid Gland should especially be examined.

The Chest shape should be examined in detail. Heart and lungs should be carefully gone over by inspection, palpation (with warm hands), auscultation (warm stethoscope) and percussion in the order named, and in children old enough, the heart should be checked after exercise. Pulse rate and respiratory rate should be noted. Percussion of the child should be more delicately done than in adults. Attention should be paid

to evidence of widened superior mediastinum in front (lymph glands, thymus, great vessel anomalies, etc.) and to D'Espine's Sign posteriorly.

Abdominal shape should be noted if abnormal, masses should be carefully searched for, being careful to palpate gently with warm hands. In infancy peristalsis can often be observed. Umbilical hernia may be seen or felt. Spleen, liver, kidney or other organs may be palpated.

Inguinal Region should be examined for glands, hernia, hydrocele, or undescended testicle in boys.

Genitalia should be examined for abnormality in all cases.

Extremities: Should be examined for symmetry, position and motion, in addition to special features under osseous and muscular systems. Clubbed fingers should be seen if present.

Central Nervous System should be investigated by means of reflexes of upper and lower extremities, at least biceps, radial, patellar, achilles and abdominal reflexes being tested. In older children coordination tests of hands, or feet, or both, should be included.

The Osseous System of children should have especial attention, looking for craniotabes, enlarged epiphyses at ends of long bones, rosary or groove on ribs, knock knee, or bow legs, changes in spine contour, and weight bearing lines of feet. Tenderness (scurvy, etc.) may be noted at the same time.

Musculature should be firm, not flabby, and symmetrically developed, and movements should be rhythmical and well controlled.

Foot Arches both longitudinal and transverse, should be examined in conjunction with muscle and bone systems as flat feet are unusually prevalent in children.

Lymphatic glands should be systematically examined either when cervicals are palpated or later: epitrochlears at elbow, inguinal glands or popliteal should not be overlooked.

Temperature, rectally or by mouth completes the physical examination.

Other procedures such as laboratory or psychiatric examinations may now be considered but they are beyond the scope of this paper.

A resumé of the above findings is then in order, and an attempt made to evaluate findings properly, on basis of heredity, environment, past history including feeding, in conjunction with present history. If this be done to best of ability, the examiner will have done an efficient service to the patient, and will have detected malnutrition if present.

CAUSES FOR POOR NUTRITION OTHER THAN THOSE WHICH ARE PURELY PHYSICAL*

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Causes which are not strictly physical exert a profound effect on nutrition in all classes of society. These may be grouped under three main headings: 1. psychogenic anorexia; 2. poor habit formation, and 3. poverty.

Psychogenic Anorexia. In the more favored classes of society anorexia is a much more important factor in nutrition than it is among poor people or in child-caring institutions. But even among the latter we have recently seen an increase in this disturbance, due, no doubt, to successful educational efforts about proper foods.

To my mind, the prevalence of anorexia of this type is due to a basic misconception of the simple facts of nutrition. Good development depends less upon adequate caloric intake than it does upon qualitative considerations in the diet. Every new report from the biologists emphasizes the need for amino-acids, mineral salts and vitamins in our diets, while in recent years the idea that a large caloric intake was necessary has been losing ground. When the calory was discovered as a *unit of energy* it was erroneously assumed that it must be a *unit of nutrition.* This resulted in two serious feeding errors; first, that large amounts of carbohydrate were advocated, and second, that food was inconsiderately urged upon children in order to increase caloric intake. The results were and still are serious to nutrition as well as to the mental health of children. The first mistake resulted in a marked increase in the incidence and severity of rickets. The second misconception caused almost uniformly a resistance to food by those forced to eat.

At the present time it is conceded by most pediatricians that the normal child will eat enough food for adequate nutrition if it is intelligently offered to him in palatable form without undue urging. Intelligence here means that the introduction of all new types of food to infants

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must be gradually and tactfully accomplished. Variety in the diet of early infancy is important because babies long accustomed to one or two foods usually resist any change from this regime. The consistency as well as the character of foods must be varied in the early months for the same reason. If properly handled, the child of from 12 to 18 months should be able to feed himself all of the important articles of food such as milk, cereal, vegetable, meat, cheese, eggs and fruit. After this educational procedure is accomplished, adults must use great care not to interfere with the child's meal time by suggesting quantity or quality of food or speed in eating. It has been amply demonstrated by Dr. Clara Davis[1] that children will inherently develop an adequate internal control of the variety and amount of food if we allow this control, appetite, to develop unhampered. If this is not done, the child rebels at undue supervision, refuses to eat and appetite, our greatest ally in nutrition, is ruined. We say that the child has anorexia.

Once anorexia is established in a child, harmful results become evident in several ways. In the first place, he becomes unhappy because life at home is disturbed three times a day by mealtime strife. This, in turn, may lead to pronounced negativism to all parental suggestions. Peevishness, temper tantrums, vomiting of meals, and other infantile reactions often appear so that the development of the "nervous child" on a nutritional basis is a common result. The actual reduction of the amount of food eaten may become of considerable importance in these children with ensuing decrease in the rate of gain. Of far greater importance than mere reduction in amount of food eaten is the fact that such children usually *learn to refuse most firmly those foods which we think of most value.* This is because such articles are the most urgently forced. The ultimate result is often that children eat extremely small amounts of foods containing accessory factors, and subsist almost entirely on milk, bread, cereals and sweets. Nutritional damage is easily seen in these fat, pasty, susceptible children whose mothers say they "don't think Johnny could live if he didn't like bread and milk."

To avoid psychogenic anorexia and insure adequate nutrition, the technique of feeding children must be carefully controlled[2] so that their natural desires are given a free reign, and dietary selections should contain only such foods as are qualitatively adequate. Sweets, white cereals, bread and puddings should be offered rarely if we expect children to develop taste for the kinds of food we know to be most important.

Poor Habit Formation. Since appetite is in a sense a habit, the previous subject should properly be included here, but it is of sufficient importance to merit separate consideration. The other habits of life which most directly influence nutrition are those of sleep, play, and bowel control.

It is so easy to establish good *sleeping habits* that it is surprising to find them so often neglected even among intelligent people. If from earliest babyhood, the child is accustomed to regular times for sleep and if a reasonable amount of consideration is given for individual variation, very little difficulty should be encountered. I add this qualification because it has been my observation that different children need varying amounts of sleep and that attempts to adjust each child to average sleeping hours are often futile. Every baby should be given the opportunity to sleep at regular intervals. His environment should be comfortable and quiet and sleep should be interrupted only when he awakens. Once asleep the baby can be trusted to remain so as long as desirable unless he is disturbed or ill. Regularity should be stressed more than number of sleeping hours. Poor habits of sleep lead to fatigue, susceptibility to disease, anorexia, and other nervous symptoms which hinder the attainment of optimum nutrition.

Play should have its regular time and place in the child's life, because it is of utmost importance in his developmental welfare. On the other hand, play should be excluded from meals because it interferes with eating. This does not mean that dinners should be dignified or funereal. On the contrary they should be most happy and cheerful times. However, blocks, toy trains and tops do clutter up the table and take the child's attention from the business at hand.

Regular habits in *bowel elimination* are of utmost importance to nutrition because of the bad results of persistent stasis on appetite and

1. Davis, Clara: Self Selection of Diet by Newly Weaned Infants, Am. Jour. Dis. of Children, Vol. 36, pp. 651-679, October, 1928.

2. Aldrich, C. A.—"Cultivating the Child's Appetite," MacMillan, N. Y., 1927.

digestion. I believe that in early infancy our attempts to secure regularity should be confined to dietary measures rather than to attacks from below as in the use of suppositories and enemas. If these measures are used the impulse to which the baby is taught to respond comes from the wrong direction. It is easy to develop an abnormal suppository habit in trying to assure regularity and this may be difficult to eliminate. It has been my policy to delay the teaching of voluntary bowel control until the child is old enough to know "what it is all about." Most of those "trained" at 3 months are not "trained" at 18 months. Violent emotions should not be stirred up over this important function because if they are, a constipation due to psychic aversion to the act may result. So arrange the early diet that involuntary evacuations will be easy and fairly frequent; then wait before attempting voluntary control until the child can cooperate intelligently and this problem will be easily solved.

Poverty. The effects of poverty on nutrition are so many-sided and important that only the high lights can be touched upon here. Under the pall of poverty the newly born babe is already poorly nourished. Usually his mother has not eaten the sort of diet which enables her to pass on to her child those factors which are necessary for good nutrition. As a result mortality rates among poverty stricken people are high at the neonatal period, and those children who survive do so in spite of a sequence of infections and nutritional ailments. Confirmation of this statement can be found in a comparison of mortality and morbidity rates of the poor with those of the more fortunate classes of infants. In later months the same condition holds true even if the babies are breast fed, because breast milk can contain only those factors stored or eaten by the mothers. If the babies raised in poverty are artificially fed the situation becomes more acute unless two factors step in to protect the child, charity and education. These have been admirably combined in the infant welfare movement which is saving and nourishing thousands of babies every year who would otherwise die. Proper cooperation with and control of infant welfare and similar activities is the duty of every physician really interested in the nutrition of children.

Inadequate heating of houses, overcrowded living conditions, unsanitary arrangements, lack of sunshine, poor personal hygiene, and filth must be added to the unfavorable factors due to or fostered by poverty. All have their bearing on nutrition. They constitute a challenge to the physician who is able to see beyond the exigencies of his daily calls.

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PHYSICAL DEFECTS COMMONLY FOUND WHICH INFLUENCE NUTRITION AND WHICH ADMIT OF CORRECTION*

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The nutrition of the child depends not alone upon the availability of proper food in adequate quantity, but in no small degree, as well, upon the child's physical health and general environment. Some of the common physical defects which influence nutrition will be discussed in this paper. 1. Physical defects which mechanically interfere with the taking of food.

Carious teeth, infected teeth and gums, the absence of certain teeth and improper occlusion will mechanically interfere with the ingestion of food by causing pain or otherwise hindering mastication. To this group belong also very large tonsils which whether inflamed or not, will on account of their size alone, cause difficulty in deglutition. Difficult deglutition is however much more frequently due to another physical defect belonging in this group, i. e., nasal obstruction from any cause. Hypertrophied adenoids are most often to blame for nasal obstruction, but other causes may be nasal polyps or deflection of the nasal septum.

2. Physical defects which directly or indirectly are responsible for a poor appetite:

a. Poor appetite may be the direct result of purulent or muco-purulent discharges in the nasopharynx. Such discharges usually arise from infected tonsils or adenoids, inflammation of the post-nasal and naso-pharyngeal mucous membranes, and from infections of the accessory nasal sinuses. It is also not unlikely that swallowing such material may cause a moderate amount of gastric discomfort and thus decrease the desire for food.

b. There are many physical defects which are indirectly responsible for poor appetite because they contribute in a greater or a lesser degree to

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excessive fatigue. Of the defects belonging under this heading the more commonly encountered ones are: 1. obstructions to nasal breathing, 2. defects of vision, and 3. defects which interfere with normal locomotion. When there is obstruction to free nasal breathing fatigue is the result of interference with restful sleep, and of the extra exertion made necessary by mouth breathing. Defects of vision cause fatigue because added energy must be expended in the effort to see things clearly. When any impediment to locomotion exists excessive fatigue must result. The most commonly seen defect is the flat-foot deformity; it may be very mild or so severe as to cause considerable difficulty in walking. Corns, calluses, blisters or other injuries to the feet from improperly fitting shoes are also frequently seen. There may also be such defects as club-foot, knock-knees, and other deformities either congenital or acquired.

c. Certain physical defects cause poor appetite because they become portals of entry for infective micro-organisms and are responsible for systemic infections. It is not necessary to go into a discussion of the subject of focal infections. The importance of infections in the tonsils, the teeth, and the nasal sinuses in the etiology of systemic diseases is sufficiently well established to demand that these structures be investigated when general health is impaired. It is however equally important that good judgment be used in determining to what extent improvement can be expected, and whether the degree of improvement that can reasonably be expected justifies radical treatment. While there can be no doubt about the wisdom of removing or otherwise eradicating all definitely proven foci of infection, there is real danger that meddlesome treatment will at times be undertaken when it should have been avoided. The improvement in appetite which follows the removal of infected tonsils is sometimes amazing, but it does not follow that whenever a child has a poor appetite he will show improvement after the removal of his tonsils. 3. There is an inter-reaction between some physical defects and nutrition and this inter-reaction may produce a vicious cycle.

Physical defects such as have been discussed, which interfere with the taking of food, either by mechanical hindrance or by decreasing appetite directly or indirectly will of necessity react adversely upon nutrition. Poor nutrition thus produced will in turn result in a decrease in neuro-muscular tone, increased fatigueability, poor posture, poor functional activity of the respiratory system, the circulatory organs, the digestive tract, etc. The effect of all this will be a still greater impairment of nutrition and a vicious cycle is well under way. Unless measures are instituted to correct the condition or the conditions primarily responsible more serious results of defective nutrition may manifest themselves. Among these there may be a severe nutritional anemia, which will take months of careful treatment to correct. Frequent infections of the upper respiratory tract may result, due to the poor general physical condition and the lowered resistance to infection. The problem thus becomes a complicated one. The correction of physical defects alone may not be sufficient to effect an improvement in nutrition at this stage for the disturbed nutrition itself, if of long standing, has caused damage to many tissues and organs of the body.

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THE INFLUENCE OF ACUTE AND CHRONIC CONDITIONS UPON NUTRITION*

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The nutritional condition of an infant or child is an important index of the state of his health. That this fact is appreciated by the laity is evidenced by the mother's zeal in studying height and weight charts, and in her exultation or despair depending on whether her child exceeds or falls below the accepted standards. This concern of parents about the underweight child has been reflected in the large number of articles which have appeared recently both in the lay and medical press upon the subject of malnutrition in childhood. The majority of these articles have stressed the fact that most children who are malnourished owe this condition to faulty food habits, poor hygiene, over fatigue, pampering or other unfavorable environmental factors. In other words the child has not been properly managed at home. This explanation is often the correct one, but it is likely to give both to parent and physician a false sense of security against the possible presence of organic disease.

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It is well to keep in mind that pathology rather than psychology *may* account for the child's condition, and that every malnourished child is entitled to a thorough physical examination.

It will be readily appreciated that a great variety of acute and chronic conditions may exert an unfavorable influence upon nutrition. A few of the more frequent and important ones will be discussed.

Upper Respiratory Infections. Upper respiratory infection, at least in the changeable climate of the temperate zone, is the most frequent ailment of children. At certain seasons of the year when this infection is epidemic, it is more prevalent than all other diseases combined. By whatever name it be known, the common cold, or grip, or "flu," the clinical picture in typical cases is fairly characteristic. The child has a nasal discharge, coughs, develops a fever, is droopy, and loses his appetite. Even though the acute symptoms may subside within a few days, the patient may continue to be irritable and eat poorly for a considerable time. Several weeks may pass before the child regains the weight he has lost due to the acute illness. Not infrequently the child suffers a second attack before he is well recovered from the first, and may have a half dozen or more attacks during the winter and spring. In such instances the child's nutrition invariably suffers, and he may have failed to gain or even have shown a loss in weight during the entire time.

It should also be emphasized that acute respiratory infections may produce a variety of complications, and that these should be looked for when recovery is delayed and the child's nutritional condition remains below par. Infection within the depths of the tonsils may persist, even though the surface of the tonsils appears clean. Enlarged and infected adenoids, swollen cervical or tracheobronchial lymph glands, subacute or chronic otitis, chronic bronchitis, bronchiectasis, lung abscess, or empyema, one or more of these may result from infections of the upper respiratory tract. Involvement of the sinuses is not infrequent, and should be emphasized because symptoms and signs may be few or altogether lacking, and x-ray examination is often essential for diagnosis. Acute hemorrhagic nephritis is a sufficiently frequent complication that its presence or absence should be determined by repeated examination of the urine.

Heart Disease. Heart disease, either congenital or acquired, may be responsible for a lowered state of nutrition. Congenital heart disease is relatively rare, and a fair share of these cases show no nutritional handicap. The more severe ones, however, usually are underweight and underheight for their age.

Acquired heart disease in childhood is almost always rheumatic in nature. It is often preceded or accompanied by other manifestations of the rheumatic infection such as tonsillitis, fleeting joint pains, or chorea. In many instances, however, these other manifestations are so mild or transient that they are overlooked, or they may be absent altogether. Hence careful examination of the heart may yield the only clue to the source of the trouble. Rheumatic heart disease in children is a chronic illness. Evidence of active infection usually persists for weeks or months. There is moreover a great likelihood of recurrences. During the period of active infection the child presents a classical picture of malnutrition. He is pale, tired, and drawn, the appetite is poor, and loss in weight occurs. Indeed one of the best single criteria for determining the progress of the case is the fluctuation in weight. Even in the absence of other symptoms or signs, failure to gain weight is highly suggestive of continuing infection, and steady gain in weight is important evidence that convalescence has been established.

Tuberculosis. Tuberculosis in early life, whether it be miliary, diffuse pulmonary, or glandular in type may fail, at least in the earlier stages, to present any definite physical signs by which its presence can be detected. The one symptom which is most likely to attract attention is that the child loses, or at least does not gain satisfactorily. When tuberculosis is suspected—and it should always be suspected unless other adequate explanation for a lowered nutritional state can be found—the physical examination should be supplemented by laboratory aids; otherwise many cases will be missed. The tuberculin test, with a few well defined exceptions determines accurately the presence or absence of tuberculous infection. X-ray of the chest is most important in determining the presence, localization, and extent of tuberculous foci in the lymph glands or lung tissue. The tendency

towards rapid dissemination of tuberculous infection in children renders imperative an early diagnosis if treatment is to be effective.

Miscellaneous Conditions. A complete survey of the diseases which disturb nutrition would include well nigh the entire range of pediatric medicine. The conditions discussed above by reason of their frequency and seriousness have seemed to merit special consideration. Many others readily suggest themselves. The blood dyscrasias may be overlooked unless complete blood examination is done. The possibility of diabetes, or anomalies or infections of the genito-urinary tract should not be forgotten, and hence urinalysis should be a part of the routine study.

In conclusion it should be emphasized that malnutrition is not a disease but merely a symptom. To find its cause may tax the diagnostic abilities of the most painstaking physician.

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THE USE OF COW'S HORN IN A SIMPLIFIED METHOD OF INTERNAL FIXATION OF FRACTURES.

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Comparatively few fractures require open reduction. When it is necessary, that method of fixation is best, which is efficient and easily applied. For a number of years the writer experimented on animals and patients in an attempt to improve the method of internal fixation of fractures. After considerable experimental work, I found that an intramedullary splint of metal passed through the cortex along the medullary canal for a distance of 1 to 3 inches beyond the fracture holds better than the customary types of internal fixation. Furthermore, I found that the insertion of a cortico-medullary splint requires little time, a minimum of trauma and a modicum of skill.

In the first 10 cases of open reduction of fractures by the cortico-medullary method of fixation, metal was employed, and the outer end of the splint was allowed to protrude through the closed incision.

In order to avoid the use of metal and also to do away with splint material protruding through the closed incision, search was made for a substance for internal fixation of fractures that possesses advantages over material in present use, namely, metal, dead bone, ivory, kangaroo tendon, chromic gut and even autogenous bone, except possible in the hand of expert bone surgeons. Such a material should be strong, slightly flexible, absorbable, and should not retard, but preferably stimulate callus growth and bony union.

After consideration in the laboratory of various materials, cow's horn was tested and found to be strong, some flexible, readily sterilized and not too brittle. As to whether horn would prove to be absorbable and whether it would retard or possibly stimulate callus growth and bony union could be determined only by trial in a series of cases. This was done in the research department of Northwestern University Medical School with the assistance of Dr. Rupert M. Parker.

Seven dogs were used to test the merits, if any, of the simplified method of internal fixation of fractures, to evaluate, in a limited way, the technique and the worth of horn as an internal fixation material, and to determine the absorbability of horn and whether it retarded or possibly stimulated callus growth and bony union.

A humerus each of 3 dogs was fractured and cortico-medullary fixation with horn was done. All 3 dogs became infected from faulty technique. They were immediately killed. Next one ulna each of 4 dogs was fractured and the cortico-medullary horn splint inserted. One dog died on the third day; cause was not determined. The remaining 3 dogs had prompt bony union with an abundance of callus in and about each fracture. In 2 killed dogs there was an appreciable amount of horn absorbed in 4 weeks and in 3 months fully half of the horn had been absorbed. The last dog has not yet been killed to see how much horn, if any, remains unabsorbed.

A year ago I began the use of cow's horn as an internal fixation material in fractures which required open reduction because of extensive interposed tissue. The bones involved were clavicle 1, humeri 2, radius 1, femur 1, ulnae 3, tibia 1. The technique is as follows: after the incision and exposure of the fracture, a hole is drilled through the cortex 1 to 3 inch distant from and reamed obliquely toward the fracture. The medullary tissue is drilled or

reamed 1 to 3 inches each way at the fracture to receive the cortico-medullary horn splint. While the bone fragments are held in line the splint rod of horn is passed or lightly driven through the cortex along the medullary canal beyond the fracture 1 to 3 inches depending on the size and length of the bone involved. The surplus horn protruding is cut moderately close to the cortex. The subcutaneous structures are approximated and, if necessary to close any dead spaces, a few fine plain gut sutures are inserted. The skin is closed with dermal and plaster is applied as in a simple fracture.

All 9 fractures united promptly with what appeared to be a super abundance of callus. No complication occurred. In the first patient, operated on a year ago, the end of the horn in the ulna was palpable under the skin over the olecranon for a period of six months, after which time, nothing more could be felt of the horn. X-rays are of little value in determining the presence or absence of horn. Incidentally this first case of the use of horn was in the ulna of a surgeon who says the presence of the horn has never given any symptoms of soreness or discomfort.

SUMMARY

1. A new, simple, efficient method of internal fixation of fractures has been presented.

2. A new and apparently better material for internal fixation of fractures has been found in cow's horn.

3. Callus and bony development appear to be stimulated by horn.

4. Horn is gradually absorbed as indicated by the dog experiments and the ulna case.

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CHOLECYSTOGRAPHY

History of Roentgen Gall Bladder Diagnosis and Recent Advances*

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Roentgen History. Perhaps no common condition in medicine has caused more debatable controversy or aroused greater interest than cholecystitis. To the surgeon, the general medical man and the internist, gall bladder pathology almost holds first rank, not only in interest but in frequency of abdominal conditions encountered.

As early as 1899, Carl Beck, of New York, first demonstrated the presence of biliary calculi by the Roentgenogram. Later, Cole, Phaler, Case and George demonstrated a greater percentage of cases showing stones and the number of cases recognized, increased as greater advance in Roentgenologic technique improved.

In the early days of x-ray work, due to the use of gas tubes and the induction coil type of transformer, technique was unquestionably the most important factor. Radiographic excellence was also much more difficult to uniformly produce, since the intensifying screens and accessories were not then in use.

The difficulties of the early workers were very much greater, because of the lack of equipment and accessories which the present day Roentgenologist now enjoys. Today, with the improved and excelled type of transformer aided by accessories like the intensifying screen and the Bucky diaphragm, an ordinary technique will cast shadows effectively and good technique will reproduce excellent Roentgenograms with almost constant frequency.

The early workers endeavored to demonstrate gall bladder pathology for the most part by the recognition of shadow-calculi. Because of a great variation of opinion—the most important of which was the personal equation of the observer—many shadows reported as that of the gall bladder did not, in truth, represent the organ as verified later by cholecystography. One of the staunch advocates of the indirect signs of gall bladder pathology after cholecystography became well established states, "Of the 'pre-Graham' indirect signs which I have at various times advanced as suggesting gall bladder disease, I have now to confess that some are unreliable." Various of my colleagues in Roentgenology have joined in teaching the reliability of these indirect signs and they have, undoubtedly, been helpful in the diagnosis of gall bladder disease. In one series of 500 cases which came to operation at our hands, where the barium meal findings were reported in writing before the operation under the head of direct and indirect signs, the indirect Roentgenray evidences were positive in 82 per cent. of the cases which showed disease of the gall bladder at

*Read before Woodlawn Hospital Staff Conference.
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operation. It is only fair to call attention to the error of depending upon the apparent value of negative statistics for there were innumerable cases among the patients not operated on where the question of the presence or absence of gall bladder disease was never checked by operation.

Two of the "pre-Graham" signs are severely criticized by this writer: first, that the visualized, elliptical shadow, presumably the gall bladder, is necessarily pathological and second, that crescentic indentation of the duodenal bulb or the duodenum beyond the bulb is due to pressure or adhesions of a pathological gall bladder.[1] The barium meal combined with cholecystography has demonstrated that a pre-dye film showing a gall bladder shadow is not necessarily pathological, since sometimes a normal gall bladder will cast this shadow, and that the crescentic shadows of the bulb cannot be conceded generally to be due to a pathological gall bladder. From the present day conception of cholecystography and to avoid pitfalls, it is hazardous to depend upon the pre-dye film alone as conclusively demonstrating gall bladder pathology. Gall bladder calculi have already been mentioned. One or two exceptions to this may include a gall bladder whose wall is calcified and, possibly, visualization of the organ by pneumo-peritoneum. In all events, to make sure of one's grounds, resort to the barium meal and the dye should be had to obtain all possible data. A knowledge of data preoperatively indicates intelligence of study of a patient and sometimes may serve as a life saving measure in the guidance of a critical case.

Indirect Findings. The early workers placed considerable stress on the indirect findings of the gall bladder. These findings of gall bladder pathology, when present, are of great value to the clinician, but, when absent, offer him no material aid; they are similar to negative findings elsewhere as a negative sputum or a negative Wassermann. The gall bladder, when thickened or calcified or containing inspissated bile, may occasionally cast a shadow if the patient's abdominal wall is not too thick. Otherwise the Roentgen evidence is not sufficient to support the diagnosis—the clinical signs sharing in the preponderance of positive evidence. Most of these indirect signs are obtained in the routine examination of the gastro-intestinal tract by means of the opaque barium meal and include the following:

1. Gastric spasm.
2. 6 hr. residue in duodenum.
3. Fixation of the pyloric end of stomach and duodenum or hepatic flexure.
4. Pulling over of stomach to right by adhesions or displacement by tumor or inflammatory mass about gall bladder.
5. Increased gastric peristalsis.
6. Demonstration of Riedel's lobe of the liver.
7. Localized tenderness over gall bladder area.
8. Demonstration of normal stomach and duodenum to exclude as probable causes of symptoms.

Gastric spasms occur not infrequently in association with cholelithiasis, cholecystitis and pericholecystitis and when these spastic phenomena occur, attention and suspicion should be thrown to the gall bladder region. Carmen states that spastic manifestations may range from a slight incisura to a temporary hour-glass stomach or a regional deformity confined to an entire area, as the pylorus.

The six hour residue in the stomach or duodenum may occur due to a result of pericholecystic bands of adhesions constricting the pylorus or duodenum. Sometimes, though rarely, a gastric residue may occur with cholecystitis but without organic obstruction.

Fixation of the pylorus or duodenum may occur as the result of adhesions in the gall bladder area, causing roughening of the pylorus and irregularity of its contour. The bulb, too, may undergo stenosis or irregularities as a result of adhesions.

A distended or dilated gall bladder or an inflammatory mass about it may cause an indentation of the duodenum or antrum or displace it to the left. Rarely still, a malignant mass of the pylorus such as carcinoma may perforate into the gall bladder and communicate with that organ. Increased gastric peristalsis may occur as reflex phenomena in gall bladder diseases with or without duodenal obstruction. Case considers the presence of Riedel's lobe of the liver as a valuable sign of cholecystitis after inflation of the colon. Some authorities consider this condition as congenital or due to tight lacing of corsets which, in the present age, fortunately does not exist.

Localized tenderness over the gall bladder region is only of value when there are other definite signs present. Taken by itself, it is

of little value as many patients complain of tenderness here, who show a normal gastric and duodenal outline.

Prior to 1923 the status of gall bladder diagnosis by x-ray remained as outlined above. Graham and Cole, in their first paper, brought out the value of visualizing the gall bladder by means of the intravenous injection of the dye salts of sodium phenolphthalein, combining it with the halogen group.[2] Over a period of many months of experimental work utilizing all the salts, it was successfully demonstrated that a normal gall bladder will cast a shadow from 4 to 24 hours after intravenous injection and that the iodine salt of the dye will cast the most intensive shadow of all; thirdly, and equally as important, is the fact that the iodine salt is less toxic and can be given in larger amounts.[3]

In June, 1925, Milliken and Whitaker revolutionized the method of administration by giving the salt orally, the method being tried out at the same time, coincidentally, by Graham, Cole and Copher.[4] The dye in some pill or capsule form was used, first coated with salol and later with keratin to withstand attack by the gastric secretion. Due to some of the capsules occasionally not dissolving in the intestines, the reliability of this method was questioned and the oral method gained less favor and popularity. However, since 1925, when Menees and Robinson administered the dye orally in solution, using the salt of sodium tetrabromphenolphthalein, the oral method regained its popularity and became the method of choice by most workers.[5]

Again, in December, 1927, Levyn and Aaron of Buffalo further stimulated the oral method by giving the newer salt, sodium tetraiodophenolphthalein in solution. They dissolved the salt in water and mixed the solution with grape juice. To facilitate ease of administration, they had the powder put up in individual doses in such a manner that enough malic acid was added to precipitate one-half the salt, claiming that the suspension would keep indefinitely and yet form, when administered, a freshly precipitated free acid, which is absolutely essential. This precipitated mixture was added to fresh grape juice when given the patient and therefore the entire salt was precipitated for the test. The presumption was that this treatment broke up the unstable disodium salt into the stable monosodium salt and sodium malate, thereby preventing decomposition.[6]

With precautions observed and instructions faithfully carried out, the oral method is now considered to be as equally reliable as the intravenous route. The oral method has, in many cases, been repeated to confirm the original findings without resorting to the intravenous route, where absence of the gall bladder shadow occurred and was proven by the presence of a pathological gall bladder at operation. Where shadows of unabsorbed dye are seen in the intestines or in instances where bowel movements have been profuse from one to two hours following ingestion of the dye, a good cholecystogram has been visualized, repeatedly. If the dye is retained, invariably there is sufficient absorption to cast a shadow in spite of incomplete absorption and one or more loose bowel movements.

Some workers using the oral method are now administering from one to four fluid drachms of camphorated tincture of opium simultaneously with ingestion of the dye to overcome the reaction of diarrhea, an idiosyncrasy not infrequently encountered. The absorptive powers of the alimentary tract are not impaired or interfered with as far as the dye is concerned passing through the intestinal wall. Very frequently this finding is borne out in cases wherein morphia or opium has been given to control pain during a cholecystographic study. Furthermore in an opinion of Dr. Ivy, given to the writer, morphine or opium does not interfere with the passage of the dye through the intestinal wall. Orally the writer never exceeds a dose of 2 grams in patients weighing over 125 pounds; those weighing under 110 pounds are given 1½ grams if the weight is proportionate to the height; in children the dose is proportionately less.

Physiology. The dye salt is eventually excreted by the liver and by the gall bladder. During the passage through these organs, similar to the passage of barium sulphate in gastrointestinal examinations, a shadow will be produced on the x-ray film. The concentration of the gall bladder contents, due to the absorption of water, is primarily responsible for the intense dye shadow which is cast. Carlson, in an

article on "Physiology of the Liver," states the following:

"It is definitely demonstrated that the bile in the gall bladder is concentrated, that there is considerable water absorption. Apparently some mucin is added to the bile in the gall bladder. The gall bladder itself is freely contractable by virtue of the small amount of muscle tissue in its wall. We must remember that the entire liver, including the gall bladder and duct system, is a diverticulum of the intestine and we must expect some remnants in structure and function in duct from this original intestinal anlage. Bile is continually produced by the normal liver, even in fasting man and animals, and it continues to flow into the intestines provided there is no obstruction to the duct system, even during prolonged fasting. I feel that the role of gall bladder as the storage organ for bile has been greatly exaggerated, as many text-books of physiology err when they state that bile does not enter the intestine except during digestion. The inference from such a statement is that the bile secreted during fasting is stored in the gall bladder; the gall bladder is not of sufficient size for such storage, even though considerable absorption of water from the bile takes place in that organ. Animals at autopsy show relatively the same size of the organ whether they are killed fasting or in a state of digestion."[7]

Furthermore, the normal gall bladder has a capacity of about 30 cc. and, in the course of 24 hours, from 500 to 1500 cc. of bile are secreted by the liver, this demonstrating that the organ accomplishes little, if anything, in the way of storage. Rous and McMaster in 1921 proved that the gall bladder was able, in a few hours, to concentrate one-seventh of its bulk;[8] therefore, the dye is best given in the most convenient time for the patient, preferably followed by an evening meal, omitting fat and protein, and allowing concentration of its contents overnight. The x-ray examination is made the next morning, omitting breakfast, after a fasting interval of sixteen hours. My experience with the dye, since its introduction by Graham in 1924, has made me feel that the period of greatest intensity of the shadow occurs after a lapse of sixteen hours. Fortunately this occurs whether the dye is given orally or intravenously as the instructions and precautions are the same for both methods. Most workers, among them Case, have demonstrated that the dye casts its maximum shadow at 15 to 16 hours following ingestion. One or more hours following a fat meal a normal gall bladder becomes less in size and sometimes less in density, although this latter does not always happen.[9]

Dilatation of the bile ducts from 2 to 6 times their pre-operative diameter following removal of the gall bladder has been demonstrated by Mann. The sphincter of Odii was also observed by him to become more or less functionless after removal of the viscus. The same worker injected rose Bengal dye intravenously after ligating the cystic duct and found some of the dye in the gall bladder, the liver having excreted the major portion of the dye, demonstrating the excretory function of the organ, at least for this dye.[10] Mann draws the following hypothesis for the function of the gall bladder: During the fasting state the liver produces small amounts of bile, most of which is stored and concentrated in the gall bladder. After a meal, as the acid chyme enters the duodenum, it causes the sphincter of Odii at the ampulla to relax and the gall bladder expels bile. Bile is rapidly absorbed and stimulates the liver to excrete more bile. During the process of digestion the flow of bile to and from the gall bladder is active. This occurs just as long as acid chyme flows into the duodenum. As the stomach becomes emptied, there is no longer any need for much bile, hence the quantity gradually diminishes until the secretory activity of the liver is reduced to a fasting state. In the fasting state most of the bile secreted by the liver is stored in the gall bladder by concentration.

Using these physiological facts in cholecystography, we allow the contents of the gall bladder to become concentrated overnight, allowing sixteen hours to insure this condition and to give the dye its maximum intensity corresponding to the greatest point of gall bladder concentration. Boyden, an anatomist of the Harvard Medical School, demonstrated in 1922, for the first time, that complete collapse of the gall bladder in mammals could be induced naturally by appropriate food, that is a meal rich in fat, as egg yolk and cream, and that pure protein in the form of eggwhite, or carbohydrates, failed to produce any marked decrease in the size of a distended gall bladder. Whitaker, also, studied other foods and chemicals for reduction of the size of the gall bladder, such as peptone and meat protein, egg albumin, hydrochloric acid and magnesium sulphate, the latter two substances introduced through the duodenum, and found that Boyden's meal, egg yolk and cream, caused the most rapid reduction.[11]

Anatomy. The anatomical structure of the organ should be taken into consideration, especially those features mostly concerned with function. The most important are: 1. The serous or external coat, which is derived from the peritoneum, covers the fundus, but only the under surface of the neck and body. 2. The fibro-muscular coat, beneath the peritoneal coat, consists of irregularly dense, fibrous tissue interlacing in all directions and through which runs plain muscular fibres, chiefly placed longitudinally. 3. The mucous membrane, a secreting inner layer, is continuous with the mucosa of the bile ducts and is attached loosely to the fibrous layer. Histologically the mucosa is covered with columnar epithelium which secretes an abundance of thick, viscid mucus. The entire mucosa is thrown into elevated folds of minute rugae, by union of which numerous meshes are formed, the intervening spaces greatly adding to the absorptive area. Mann's assertion that, "The gall bladder seems best suited for absorption and the muscular coat to keep the contents well mixed and in contact with the mucosa," is well borne out by its peculiarly adapted anatomy. 4. An intricate and elaborate lymphatic system connects with those of the duodenum and pancreas and communicates with the retroperitoneal lymphatics of the abdomen, especially in the right lower quadrant —one of the factors concerned in the etiology of gall bladder pathology following infection in the right lower quadrant of the abdomen.

The shape, form, size and position of the gall bladder conforms to the type of the individual, similarly to the characteristics of any of the hollow, abdominal viscera. It may be located anywhere in the right half of the abdomen, again conforming to the type or habitus of individuals, from the ninth interspace to an area below the iliac crest—a teaching much opposed to the older text-books of anatomy.

Recent Advances in Cholecystography. The sodium salt of tetraiodophenolphthalein was in general use, either orally or intravenously, up to the early part of 1926. In February, 1926, Graham and his associates reported simultaneous cholecystography and tests of hepatic and renal function with the isomer salt, phenoltetraiodophthalein sodium.[12] The old salts did not color the serum sufficiently to be recognizable even after alkalization—that is the sodium salts —tetrabrom and tetraiodophthalein. Since it is known that in this group of substances, the intensity of color of the dye depends mostly upon the location of the halogen atoms, tests for hepatic function could likewise be determined by the retention of dye in the serum after alkalization, the amount being determined colorimetrically. It was found that the new isomer salt, phenoltetraiodophthalein sodium, if injected intravenously, would not only color the serum but would yield good cholecystograms and require much less dosage besides possessing less toxic properties.

A normal liver will excrete 15 per cent. of the dye at the end of the first hour; therefore a retention of the dye above the normal in the serum would seem to indicate a comparable amount of liver damage existing—the higher the retention, the greater the liver pathology. Excising specimens of liver from each cholecystectomy and recognizing the amount of hepatic pathology comparable to the amounts of dye retained in the serum, Graham was able to estimate the value of the procedure. Almost invariably cases with considerable damage to the liver showed a high retention; while those that possessed a normal excretory function passed through the operation satisfactorily. Investigation of four unexpected deaths, outwardly good surgical risks for cholecystectomy, showed a retention of 90 per cent. in two cases, one of 70 per cent. and one of 60 per cent. A review of the sections of the liver of these four cases showed histologically extreme cloudy swelling, edema and periportal inflammation—changes considered characteristic with cholecystitis.[13]

Routine Procedure. The routine that is followed at the Woodlawn Clinic and Hospital is as follows:

1. Preliminary gall bladder film—preceded by catharsis and enema if necessary.

2. Light lunch at noon.

3. At 4:00 p. m. give gall bladder supper, meal void of fat and protein—cooked fruit, baked potato, tea and toast, *no cream or butter.*

4. Dissolve 2 grams of dye in two ounces of tap water and pour into glass of grape juice containing cracked ice—any fruit juice may be substituted for grape juice; administered in bed immediately after supper. Patient lies on right side for several hours—twenty minutes at a time

—after drinking dye solution; may have water freely to 6:00 a. m. following morning.

5. X-ray at 8:30 a. m. following morning, on an empty stomach.

6. Second x-ray examination one hour after a fat meal, consisting of glass of milk—one-half cream—crackers and butter.

The same instructions are carried out for the intravenous method, except that the dye is injected at 4:30 p. m. instead of giving orally. No food is allowed after the gall bladder supper and until after the sixteen hour examination is completed the next morning. Frequently patients who are nauseated and have been vomiting, after a period of a day's rest, will retain the dye if instructed to sip it slowly and take small quantities of the dye mixture from time to time. The right sided position facilitates more rapid emptying of the stomach and diminishes the tendency to vomit.

If cholecystography alone is desired, the sodium tetraiodophenolphthalein salt is given orally. However, it has been made the routine on one of the surgical services to use the sodium phenoltetraiodophthalein salt intravenously followed by the hepatic function test with the specimen blood withdrawn one-half and one hour after injection, allowed to remain in the ice box overnight and the retention test made the next morning. Cholecystograms are also made in the usual routine manner, sixteen hours after injection, with the same technique followed as in the oral method. The most intense cholecystogram is brought out sixteen hours after intravenous injection—the same intensity that is obtained at this hour with the iodekon salt with the oral route. Cholecystograms made earlier, after a lapse of four or eight hours, may mislead one, as frequently a faint shadow or no shadow is cast at this time. This occurred in one of our cases at the end of five and one-half hours and a faint shadow at the end of six and one-half hours. Since the liver function test was normal, repetition was made, using the oral method and the iodekon salt, with a normal cholecystogram obtained at the sixteen hour period.

It has been claimed that the newer, or isomer, salt will cast a more intense shadow than the old salt, iodekon. Either salt will cast about the same intensity of shadow no matter how given, providing the dose orally is at least two grams and the dye is not vomited. It is the liberation of the iodine from the salt which stains the bile since the iodine content of both salts is the same. Of course it is essential to carry out instructions faithfully to insure reliability of cholecystograms. In the experience of the writer it is rare to find insufficient absorptive surfaces of the small intestine to the extent that enough dye is not taken up by the portal circulation.

In a study of 1,100 patients, examined at the Mayo Clinic by cholecystography, Carman states in his conclusions: "The question may also arise as to whether defective absorption from the intestine may not be a cause of abnormal findings." Mention is made of shadows cast by the dye in the intestinal contents which may be confusing or may conceal the shadow of the gall bladder but he finds such circumstances rare. To quote verbatim: "However, all these objections and doubts seem to have little basis for, in this series, the diagnostic results from all methods have been about equal."[14]

From June, 1928, to April 8, 1933, at the Woodlawn Clinic and Hospital, cholecystography was done 523 times, the oral method being used in all but 13 cases, the smaller number being given intravenously and using the newer salt isoiodekon or phenoltetraiodophthalein sodium (phenetiothalein sodium N.N.R.) combined with the liver function test. Either nonvisualization, faint visualization or calculi were noted in 375 cases and a normal cholecystogram was obtained in 148 cases. Of the pathological cases 288 were females and 87 males. So far in this group 89 cases were carefully studied and investigated with complete examinations including all laboratory, gross microscopic pathology and Roentgen visualization and 87 cases came to operation and two to autopsy. Gall stones were found in 26 cases, 23 of which were detected Roentgenologically. In the series of 89 cases cholecystography revealed pathology in 83, a percentage of 94; of the 6 cases diagnosed in error were the following:

1. Male; 62; showing a normal gall bladder; revealed at postmortem metastatic nodules of the liver, secondary to primary carcinoma at the head of the pancreas but with no Roentgen visualization.

2. Male; 49; having a normal cholecystogram; cholecystectomy, section showed acute, hemorrhagic areas of infiltration of the gall bladder wall; liver index 7% and 4%, total of 11%.

3. Female; 51; laparotomy for partial bowel ob-

struction showing a normal gall bladder but whose cholecystogram presented no shadow.

4. Female; 31; normal cholecystogram; operation showed the presence of one stone which was removed but the gall bladder was allowed to remain; no symptoms have recurred in this patient since her cholecystotomy.

5. Female; 53; showing a normal cholecystogram; at operation a strawberry gall bladder was found; a specimen from the liver on biopsy showed severe fatty degeneration and infiltration; hepatitis satellite.

6. Female; 35; presenting a normal cholecystogram; pathological report, subcapsular fibrosis of gall bladder; liver specimen, early biliary cirrhosis.

TABLE 1

Age Incidence—89 Cases

Age	Male	Female
Under 20	0	1
20-30	1	11
30-40	8	12
40-50	8	17
50-60	7	11
60-70	6	3
70 and over	3	1
Total	33	56
Combined Total	89	

TABLE 2

Weight Incidence—89 Cases

Weight	Male	Female
Under 100	0	1
100-120	1	7
120-140	7	23
140-160	11	13
160-180	7	9
180-200	3	2
Over 200	4	1
Total	33	56
Combined Total	89	

To the percentage of error may be added two cases in which stones were reported in addition to a pathological gall bladder that at operation demonstrated pathology in the gall bladder but no stones, thus lowering the percentage of gall stone detection.

It will be observed that three of these five cases presented very extensive, advanced pathology of the gall bladder in which the liver index was slightly increased. The case of the female, age 47, (Case 2, Table 3) with markedly advanced gall bladder and liver pathology only had a liver index of 25 per cent., slightly above normal. One of our post mortems of alcoholic cirrhosis of the liver showing markedly advanced macroscopic and microscopic pathology, so extensive that upon gross appearance no normal liver tissue could be visualized, had a liver index of only 25 per cent. From these and other observations it can be assumed that considerable damage may occur to the liver substance with the liver index not recording anything like the extent of pathology present. On the other hand it may be assumed that only a small amount of liver substance is essential to carry on a minimum bodily function and that we possess a very generous amount of spare liver tissue.

As will be noted in Table 1, relative to age incidence, the greatest number of cases occur between the ages of 30 to 45, becoming less in the third decade of life and relatively uncommon in patients under twenty. In our series of 89 operative cases, cholecystitis is twice as common in the female as in the male; in the total series of 523 cases, the proportion is three times

TABLE 3

Five Operative Cases With Pathology of Gall Bladder and Liver

Case	Roent. No.	Sex	Age	Cholecystogram	Liver Index ½ Hr.	1 Hr.	Total	Pathology Gall Bladder	Pathology Liver
1	3574	M	44	Good visualization	7	4	11	Acute areas of hemorrhage with infiltration of wall; strawberry mucosa.	
2	3783	F	47	No visualization	15	10	25	Wall considerably thickened (11 x 6 x 5.0 cm.) lumen contained cylindrical stone, 5 x 3 cm., round stone 1 cm. fundus.	Extensive perivascular and interlobar round cell infiltration. Biliary Cirrhosis.
3	4313	F	40	Good visulaization; deformity with stones	12	6	18	Gross—specimen for museum—3.5 cm. from neck is circular constriction dividing viscus in 2 compartments, connected by 5 mm. opening	Too dry for section
4	4354	F	51	Good visualization; deformity.	17	10	27	Gall bladder grossly normal—drained.	Capsule thickened by dense fibrous tissue with round cell infiltration and new capillaries; liver parenchyma well preserved except margin, showing round cell infiltration, chronic hepatitis.
5	4127	M	54	Good visualization, stones, deformity.	12.5	7	19	Slight thickening mucosal folds; fibrosis of wall	None made.

as many in the female as in the male. As regards weight incidence, the greater number of cases occurred in the 140 to 170 pound class; in the 200 pound class three times as many males were affected as females. As a rule the very slim rarely have gall bladder disease; the old axiom of the "fair, fat and forty" having by far the greatest incidence of cholecystitis apparently still holds true. (Tables 1 and 2).

SUMMARY

The history of Roentgen gall bladder diagnosis is given, followed by cholecystography and Roentgen progress. The indirect findings upon which the older workers placed so much stress are evaluated. The anatomy and physiology of the viscus in the light of recent research has placed upon cholecystography an indispensable means for correct diagnosis with but few exceptions. There is still much to be learned concerning the physiology of the liver and gall bladder and perhaps newer methods for determining their function will open up a most illustrious field in clinical research. Where chronic disease of the gall bladder is known to exist, the intravenous method of cholecystography with the new isomer salt offers the most valuable data since it combines the hepatic function test and cholecystography with one injection. Finally, instructions for routine procedure as followed in the Woodlawn Clinic are enumerated with the results of a study of 89 operative cases.

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PARAMEDIAN INCISION*

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The subject of abdominal incision has interested us for many years. Results obtained through the employment of the commonly used incisions were so often unsatisfactory in our service that we undertook a careful study of the problem. This included dissection of a large number of cadavers in order to familiarize ourselves with the normal structure of the abdominal wall, a survey of the literature for descriptions of various incisions for the purpose of a comparative study and the choice of abdominal incisions observed in the principal clinics at home and in Europe. Whenever possible, information was gathered concerning the after results of these various types. In a previous communication one of us (P. J. S.) reported the end results of abdominal surgery on 586 patients, who had had vertical, oblique, transverse or combined types of incisions.

From this study we concluded that an abdominal incision should be of adequate size so that the organs can be explored without difficulty. The incision should not cut the oblique and transversalis muscles, but their fibers should be separated. The nerve and blood supply of these muscles can thus be preserved. The vertical separation of the fibers of the rectus muscle destroys the nerve supply of the mesial portion and produces a permanent weakness of the abdominal wall. The linea alba is very highly differentiated connective tissue. The healing of incisions in this structure is very slow. A trans-

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verse incision through such an important structure as the rectus muscle is unnecessary. The resulting scar from the transverse incision of the rectus produces a fibrous scar of the whole thickness of the muscle, a condition which does not simulate the normal transverse lineae. Gradual weakening of this scar by stretching is quite a common occurrence. The blood supply of the abdominal wall comes from three directions, viz: upward, downward and laterally. The blood supply is very free and cutting any one of these vessels does not bring serious results but if the blood supply from all directions is disturbed, infection and slow healing result.

These conclusions made us seek for incisions that would conform to anatomical and physiological desiderata. We found that only two types of incisions met these requirements, the oblique muscle splitting and the paramedian with lateral retraction of the rectus muscle.

Gridiron or muscle splitting incisions require no commendation. The universal use of this incision speaks for its merit. In indicated cases it has proven a valuable incision in our hands. We have never observed herniation following damage to the last thoracic or first lumbar nerves, and few observers have reported on such an occurrence.

The paramedian incision with lateral retraction of the rectus muscle is valvular in construction. It can be extended from the xiphoid process to the pubes without injury to the nerve or blood supply of the abdominal wall. It can be made on either side of the abdomen and with careful retraction all parts of the peritoneal cavity can be thoroughly explored.

The incision is made one inch lateral to the midline of the abdomen. The anterior rectus sheath is opened parallel to the skin incision and the mesial edge of the muscle is dissected free and displaced outwardly. The posterior sheath and peritoneum are divided in the line of the opening of the anterior sheath.

The objection often raised against any vertical incision is also raised here, namely, that there is a great deal of strain in the line of incision. Proper coaptation maintained until union is firm, removes all danger of strain.

In cases where drainage is required a stab wound is made on the lateral side of the rectus in the semilunar line or through the oblique muscles and the drain brought out through it. If the wound is to be drained for a short period it can be established through the upper or lower angle of the wound without fear of herniation. As soon as the drains are removed the wound should be held together tightly so that the muscle will slide over the opening.

Closure by layers is the rule with us. The peritoneum and the posterior sheath are approximated with continuous catgut. The muscle easily slips back over this aponeurotic structure. Silkworm retention sutures are next inserted, 2.5 cm. apart, and including the anterior sheath and skin. A second continuous catgut suture closes the anterior sheath and the skin is closed by means of continuous silk suture. Retention sutures are tied over a gauze roll. As a rule we have adopted the lock stitch type of continuous suture.

In the early days of our experience with this type of exposure we limited its use to lower abdominal operations. Results in our cases were so gratifying that we adopted paramedian incisions for resections of the colon. Here we followed the suggestion of Moynihan and made the invision ample in size, from six to eight inches long, obtaining ample exposures of the operative field. No herniation or abdominal wall weakness has resulted in non-drainage cases and we have never had a postoperative evisceration in our Ravenswood hospital series.

As experience grew and we became firmly convinced of the safety of this incision, we began its routine use in upper abdominal work. The technique is similar to that employed in the lower abdomen except that the lineae transversae are closely attached to the posterior sheath of the rectus and require careful dissection before the muscle can be retracted laterally.

In exposure of the biliary tract in very obese patients this incision can be slightly modified, after the suggestion of Ashurst. It begins slightly to the left of the midline just below the ensiform, extends downward and outward across the right rectus to just beyond the lineae semilunares at a point below the level of the umbilicus. The anterior sheath of the rectus is opened in the direction of the skin incision, the muscle dissected free along its inner border, lifted outwardly, and the posterior sheath and peritoneum opened beneath it in a line parallel to the linea alba. This incision, while also obviating injury to nerves of the rectus muscle, extends somewhat obliquely

through the skin and anterior sheath and the linea alba in the upper end and whenever necessary the lineae semilunares at the lower end are cut. Ashurst suggests that the linea alba and the lineae semilunares are the two resistant structures in the abdominal wall; if one or both of them are cut across one can get a great deal more exposure through a small incision than if one cuts between them. Closure of this incision is of the step ladder type, intra-abdominal postoperative stress being resisted at three separate levels.

To facilitate better exposure of upper abdominal contents, especially in biliary tract cases, the employment of a reverse Trendelenburg position, as was demonstrated by Gosset is of great help. This is accomplished by strapping the patient's body to the operating table and placing his feet against a foot rest at right angles to the end of the table. The head of the table is raised and the foot lowered. This position allows the stomach and intestines to fall away from the liver and upper abdomen and gives better access to the field of operation.

The paramedian incision has been used by us jointly in over two thousand private patients, and by one of us (G. deT.) in 1262 Cook County Hospital cases up to January, 1932. In the latter series it was used 492 times in the upper and 770 in the lower abdomen.

To check our results we recalled our private patients and such Cook County Hospital patients as could be traced and made a careful study of their abdominal walls. The survey included bulging, herniation, sensory disturbances, pain or discomfort at the site of the incision. Patients for the review were not selected but examined in rotation. No patients operated upon less than six months are included. It was our aim to examine only 1000 patients for the present report; we feel this is a sufficiently large series upon which to base our conclusions.

Of the thousand cases examined, 602 were females and 398 were males; 318 patients had had upper abdominal and 682 lower abdominal incisions. In this group one patient had had three operations in the lower abdomen through the same scar; eleven had had two exposures through the same incision, six of them of the upper abdomen.

The upper abdominal wound was drained 117 times in this group, the lower abdomen forty-six times. Twenty-one cases developed various degrees of stitch abscesses during convalescence.

The average hospitalization in the entire series was nine days.

Our postoperative revision gave the following results:

No sensory disturbance was present in the scar in any case. No pain or discomfort was complained of except that four cases reported intermittent itching sensations in the scar without any clinically demonstrable reason therefor.

One female patient had a small bulging (hernia) in the upper angle of her infra-umbilical wound. She had developed a severe infection of the wound and postoperative bronchopneumonia. Repair of her hernia was refused because she had no discomfort.

A hernia of the lower angle of the incision was found in another female patient who had been operated on for subacute pancreatitis and calculi in the gallbladder and hepatic ducts. Drainage had been carried out for a long period with complete recovery from the symptoms. A subsequent operation was performed and the herniation repaired with good results.

We feel certain that our results have been due to observance of such basic factors as:

1. Minimizing traumatism of the abdominal wall by almost total elimination of mechanical retractors and minimal use of ordinary retractors.

2. Constantly decreasing our percentage of drainage cases and increasing our reliance on the protective and reparative forces of the peritoneum.

3. Utilization of the mesial portion of the rectus sheath in closure of the peritoneum when the latter is thin and tears readily.

4. Immediate repair of any peritoneal tear by right angle suture.

5. Coaptation of abdominal wall structures without tension, thus avoiding pressure necrosis and excessive scar tissue formation.

6. Routine use of tension sutures in all paramedian incisions.

7. Absolute hemostasis of the abdominal wall incision before closure; cigarette drain to the peritoneum but not below it in cases of severe capillary oozing.

One of us (P. J. S.) has prevously published his study of abdominal incisions based on exhaustive cadaver dissection and review of the

literature. Analysis of postoperative results following various incisions other than the paramedian gave the fellowing gloomy table:

		Per Cent.
38	Supra-umbilical midline incisions—herniations	8
57	Infra-umbilical midline incisions—herniations	8.7
43	Supra-umbilical transrectal incisions—herniations	7
	Atrophy of rectus fibers	15
88	Infra-umbilical transrectal incisions—herniations	5
	Atrophy of rectus fibers	15
17	Sprengel incisions	29

Conclusions. 1. The paramedian incision with lateral retraction of the rectus muscle meets all requirements of the anatomical and physiological ideal.

2. In upper abdominal surgery the "step ladder" type of incision is best.

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SURGICAL TREATMENT OF RUPTURED GASTRIC ULCERS

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There are relatively very few diseases in which the onset may often be very sudden, without any previous symptoms, and the condition may cause death in a short time. A disease of this type is the ruptured gastric ulcer.

No age is exempt from perforation of the stomach. Masteus operated on a six-year-old girl; Keen and Nusser a man of seventy years. There is no part of the stomach which is immune from perforation.

The onset of perforation is without warning, it comes as lightning from a clear sky. There is no relation to food intake. The symptoms are the same as in a ruptured viscus and differential diagnosis is difficult. It is impossible to tell whether it is a ruptured stomach, ruptured appendix, gall bladder or a ruptured ovarian cyst. The patient usually cannot locate the punctum maximum of the pain. The last case I operated on was a young girl who had never had gastric symptoms previous to the rupture. She located the pain at McBurney's point, which, no doubt, was due to the fact that there was a collection of gastric content in the right pelvic region. Examination usually reveals pain around the umbilicus. It is impossible to locate the point of greatest rigidity because the entire abdomen is rigid. There is no distention of the

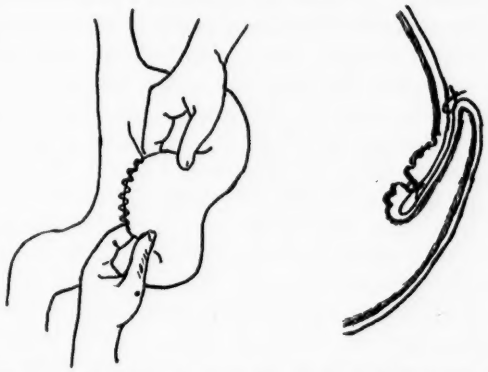

Fig. 1. Grasping the anterior wall of the stomach, folding over and covering the entire surface of the ulcer, using one continuous suture.

Fig. 2. Cross section of the anterior stomach wall showing the entire ulcer covered with healthy layers of the anterior stomach wall.

abdomen until peritonitis sets in. Respiration is increased, the temperature is below normal, pain is agonizing, and there is board-like rigidity. The pulse is normal at first, especially if morphine has been given when the pain is not localized in the epigastrium. This may be misleading to the surgeon in making his diagnosis and precious time may be lost, increasing the danger to the patient. On rectal examination there is tenderness to the left or right, depending upon which side of the pelvic cavity the greatest amount of stomach content has collected.

The result of operation depends upon the length of time which elapses between the perforation and the operation. A case operated on after the first 24 hours has less favorable prognosis than one operated on within the first 12 to 24 hours.

It is not necessary that the abdominal incision be made in the epigastrium. I prefer the incision above the right rectus beginning just below the umbilicus on the medial side of the rectus muscle. By opening the right rectus sheet I

make a 2-inch incision in the direction of the pubis. This incision has many advantages over the epigastric incision: 1. If the surgeon erred in his diagnosis of ruptured gastric ulcer and if a ruptured appendix, tube, or ovarian cyst is found the incision can be rapidly enlarged downward; if a mucoid, pale yellow fluid is found containing some food particles the incision can be enlarged upward about 2 inches or more, thus making a 4 or 5 inch incision, through which the stomach can be easily explored. The stomach should be pulled down and the lesser curvature examined. By retracting to the left the entire anterior surface of the stomach can be seen. If the foramen of Winslow is closed by adhesions that is indication that there might be an ulcer on the posterior surface which tears in the bursa omentalis. This can be seen by making an incision through the gastrocolic ligament below the gastro-epiploic vessels. However, most of the perforations are on the anterior surface. This has been true in all my cases. 2. This incision is excellent from the standpoint of drainage. When the patient is in Fowler's position after the operation, the drain (cigarette) which is placed at the lower pole of the incision in the pelvis drains the pelvis excellently and no suprapubic incision is necessary for drainage. The drain can be removed in 24 hours and the incision heals by primary intention.

The most important consideration in ruptured gastric ulcers is the method of closure of the perforation. When the opening is discovered it must be closed. The question is—how? Some surgeons use purse string sutures, suturing the omentum above the rupture, some use mattress sutures, others do an excision of the ulcer or a gastro-entero-anastomosis. The size of the perforation varies, it is usually not larger than a pencil, but the surrounding tissue is so friable that sutures used in an attempt at closure of the perforation will cut out. The shorter the period of operation the better chance for the patient's recovery. The best operative results are obtained by the simplest closures. Excision of the ulcer makes the operation very hazardous, it does not prevent the recurrence of ulcers and it tends to increase the mortality rate.

It is needless to say too much pro and con gastro-entero-anastomosis. Von Eiselberg, who advocates this procedure, says that it provides against undue tension of the closed perforation and prevents the danger of formation and perforation of an additional ulcer. It also prevents hemorrhage and promotes recovery where the perforation is in an inaccessible part of the stomach, as the cardia. Opponents of gastro-entero-anastomosis affirm that it is unnecessary, that it jeopardizes the chances for recovery; it does not prevent hemorrhage; it does not insure healing of the present ulcer; and the mortality rate is very high. There are a few surgeons who report a low mortality probably due to the fact that when they performed the operations the patients were in excellent condition. Mayo best answered the controversy when he said that it is fruitless to make an anastomosis when the pylorus is free from obstruction. It is obvious that the simplest procedure is the best for the patient. Mattress sutures take but a few seconds to make and anastomosis at least half an hour. But even the simple mattress suture may be very difficult if the tissues are friable, and if this suture does not hold the patient is lost.

I wish to describe a simple method which I used in my last three cases, all of which recovered completely. I tried this method when I could think of nothing else but how to close the opening, and it proved very satisfactory. All three cases on which this method was used recovered completely. This method is simple because it takes only a few minutes and can be used in any part of the stomach except very near the pylorus or cardia. One case of ruptured stomach which I operated on was a man of 57 years, markedly emaciated, with a 3 plus sugar in the urine. The perforation was found near the small curvature on the anterior surface. It was the size of a finger tip and surrounded with an ulcerous tumor mass the size of a tangerine, covered with fibrinous adhesions. It resembled a carcinoma except that there was no infiltration of the glands. I made many attempts to use a mattress suture, but each time it cut through. I then used a fine silk purse suture, beginning ½ cm. from the perforation, leading the suture superficially between the peritoneum and muscular coat of the stomach. By this purse suture it is always possible, by very gentle pull to approximate the edges of the perforation without trying to invaginate, which would cause the suture to break through. I then took a large fold of the stomach, almost one-third of the anterior wall of the healthy part of the stomach

and sutured with continuous sutures on the top of the ulcerous area, working always in healthy tissue 1 cm. away from the callous mass, covering this area with an incomplete half circle of healthy stomach wall. I have used this method of purse suture and then covering the ulcerous area with a half circle of healthy stomach wall in two more cases with uneventful post-operative recovery.

I believe this method can be used in any section of the anterior wall of the stomach. I have not had an opportunity to try it on the posterior wall.

Many advantages are evident in this type of closure of ruptured stomach. The suturing takes only a few minutes. The occurrence of a second rupture in the same place is prevented. This is better than any other method used because the ruptured area is protected by an entire reticulum of healthy stomach wall consisting of all the layers of the stomach. As can be seen on fluoroscopic there is no functional disturbance. The advantage over anastomosis or excision is that there is no new field of infection opened and there is no risk of the patient's life. No adhesions can be formed between the anterior wall of the stomach and the abdominal wall or surrounding organs. The operation is almost bloodless.

Anatomical knowledge is necessary not to use the curvature major or minor for making the flap, because here the blood vessels are located, and hemorrhage might result or there might be an interference with the blood supply to the stomach.

The patients feel immediate relief after operation, unless, of course, a peritonitis has set in, which happens only if the patient has been allowed to go too long without surgical interference. In the last which I operated on it was not even necessary to administer narcotics for relief of pain post-operatively.

Case 1. Mr. W. M., aged 30 years. Gastric ulcer diagnosed 3 years previously. Had frequent attacks of epigastric pain relieved by taking soda. Had been feeling perfectly well when seized with sudden, sharp, excruciating pain in epigastrium. He was brought to the hospital and operated on two and one-half hours later. There was board-like rigidity of the abdomen with fluid in the left flank and pain on deep palpitation just below the sternum. The temperature was 97.8°, pulse 70 and respiration 20. Leukocyte count was 19,100. Laparotomy revealed ruptured gastric ulcer on the lesser curvature of the stomach with a perforation about 3 mm. in diameter with a callous ulcerous area about 2 inches in diameter around the perforation. There was a large quantity of gastric content free in the abdominal cavity. The perforation was closed by use of a purse string suture and overlapping of healthy stomach wall. One cigarette drain was used in the lower pole of the incision. This was removed on the second day. The patient was placed in Fowler's position. Fluids were supplied by hypodermoclysis and proctoclysis on the first two days. The third day fluids were begun by mouth. The wound healed with a slight amount of granulation. The post-operative course was complicated by bronchopneumonia from which the patient completely recovered. There were no abdominal complications.

Case 2. Mr. E. Z., aged 57 years. Had had epigastric pain for three years coming on after meals. It had gradually been getting worse. Had been feeling fairly well when he was suddenly seized with severe, excruciating pain. He was brought to the hospital and operated on six hours later. There was board-like rigidity of the abdomen especially in the epigastric region. The urine contained 3 plus sugar. 25 c.c. of U 40 insulin was given one-half hour before operation. A high midline incision was made and a perforation the size of a finger tip was found high on the lesser curvature of the stomach. The abdomen contained a large amount of stomach contents. There was an ulcerous area about 2 inches in diameter around the perforation. The tissue was very friable. There were numerous fibrinous adhesions around the omentum and gall bladder. Attempts to use mattress sutures were unsuccessful. Purse suture and folding of healthy stomach wall over the ulcerous area was done. The fluid was removed from the abdominal cavity by suction. One cigarette drain was used and was removed on the 2nd post-operative day. There was a trace of sugar in the urine the first day after operation but thereafter it was negative. Treatment was the same—Fowler's position, nothing by mouth for the first three days, normal saline and glucose subcutaneously. The post-operative course was uneventful, the wound healed nicely and the patient recovered completely.

Case 3. Miss D. B., aged 19 years, was seen suffering severe pain in the right lower quadrant of the abdomen, of one-half hour's duration and nausea and vomiting of two hours duration. She had had slight pain and belching after the evening meal for the past week, but no other symptoms at any time. The temperature was 97.2°, pulse 92, respirations 26. Leukocyte count was 9,600 with 84% polymorphonuclears. The patient was brought to the hospital and an emergency laparotomy performed. Incision was made to the right of the midline below the umbilicus. On opening the abdomen a pale yellow, mucoid fluid, apparently stomach content, was encountered. The incision was extended upward and on exploring the stomach a perforation was found on the anterior surface of the stomach near the pylorus. Purse suture of catgut and

three Lembert interrupted sutures and one mattress suture were used to approximate the edges of the perforation. A flap of the anterior wall of the stomach was then brought over the area of the perforation and a half circle of healthy stomach tissue fixed by continuous sutures. The fluid was removed from the abdominal cavity by suction. A cigarette drain was placed in the lower pole of the incision. The patient was placed in Fowler's position. The drain was removed on the second day following operation. Nothing was given by mouth until the fourth post-operative day, fluids were supplied by hypodermoclysis. The temperature reached a maximum of 101° on the fourth day. The sutures were removed on the thirteenth day, the wound healing by primary intention. Convalescence was uneventful.

THE DIAGNOSIS OF A FETAL MONSTER IN A CASE OF POLYHYDRAMNIOS BY MEANS OF A PRENATAL ROENTGENOLOGICAL EXAMINATION

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In a great majority of cases reported in the literature, fetal malformations have been found either during or following difficult and abnormal labors. Few have had the benefit of a prenatal roentgenological examination. Nearly all of them have been associated with either hydramnios or oligohydramnios.

James T. Case (1917)[1] reported the first case of anencephaly which was discovered by means of a prenatal roentgenological examination. Naujuko (1928)[2] reported one case and W. O. Weiskotten (1933)[3] reported three cases of hydramnios in which a prenatal roentgenological diagnosis of anencephaly was made. S. Lubin of Brooklyn (1932)[4] reported a double monster and Jos. L. Baer[5] and R. A. Riess of Chicago described a rare case of sympus apus, resulting from pathological pregnancies. In both instances the monsters were discovered during labor and neither of them had a prenatal roentgenological examination. A review of the literature for the past ten years discloses that hundreds of abnormal pregnancies, many of which resulting in fetal malformations, have been denied the benefits of a prenatal roentgenological examination.

The average case of polyhydramnios usually yields over 2,000 cc. of amniotic fluid. Besides the frequent case of a slight increase in the amount of amniotic fluid which passes unnoticed, we infrequently encounter one in which the quantity of the liquor amnii reaches over 1,500 cc. According to J. O. Polak[6], polyhydramnios is found in 1:100 pregnancies, while those of more severity occur in 1:300 cases. Jos. B. DeLee[11] gives the same estimated ratio.

Various theories have been offered to explain the primary origin of the liquor amnii, and the reasons for its abnormal formation and influence on the course of a pregnancy and fetal development. Wohlgemuth and Masone[7] stated that liquor amnii is a transudate from the maternal blood vessels into the uterine cavity. It is therefore formed in excessive quantities in maternal diseases, ruch as hydremia or general anasarca, which may result from nephritis or cardiac decompensation. Polano asserted that amniotic fluid was secreted by the amniotic epithelium. Cohenstein and Zuntz[8] and also Ahlfeld[9] proved conclusively that the pressure in the fetal kidneys was insufficient for urinary excretion; thus they helped to disprove the theory that fetal urine contributed to the composition of the liquor amnii. Therefore, the origin of the liquor amnii still remains an unsolved mystery. According to Keim,[10] the quantity of the amniotic fluid gradually increases up to the seventh month of gestation; it then steadily decreases until at term, when there is usually just enough fluid to fill the spaces between the irregular contour of the fetus and the walls of the uterine cavity.

The composition of the liquor amnii consists in addition to fluid, of an accumulation of exfoliated epidermis, sebaceous matter and lanugo hair from the fetal skin; all of which we call vernix caseosa. It also contains some cholesterids and glycerids, secreted by the amniotic epithelium and some leucocytes and unclassified cells. If the fetus dies, the liquor amnii often becomes blood-stained. In cases of asphyxia, the amniotic fluid is usually thick and green, due to admixture of meconium.

Fetal diseases and abnormalities may cause marked increase in the amount of liquor amnii. Joseph B. DeLee[11] enumerates the following:

1. Abnormal persistence of the vasa propria, immediately underlying the amnion. These are usually present in the early months of gestation.
2. Abnormal pressure on the cord due to obstruc-

tion to the umbilical circulation, caused either by vicious insertion, tortuous or knotted cord or by luetic cirrhosis of the liver.

3. Fetal diseases of the heart and lungs, such as aortic stenosis, pneumonia alba, etc.

4. Unioval twins.

5. Monstrosities and other fetal deformities, such as spina bifida, pyloric stenosis and occlusion of the œsophagus.

Since polyhydramnios is almost invariably associated with fetal malformations or maldevelopments, the finding of such a condition should always induce the clinician to attempt to exclude the presence of a possible monster.

Single monsters are the most common in occurrence. DeLee[11] found them to have an hereditary tendency, which he presumes to be either germinal or inherent in the ovum. He found the same peculiar deformity in several generations or members of the same family. He also stated that shock, worry and deprivations may produce vascular and nutritional disorders

Fig. 1. Lateral view, showing acranial monster with complete abdominal eventration and cystic umbilical cord

in the endometrium which may seriously affect the growth of the fetus. Haller[12] asserted that external trauma, resulting in injury to the abdomen or uterus, may cause structural deformities of the fetus. Dareste [13] and also Lebedeff[14] observed that monstrotic genesis was due to arrested development of the ovum during the blastula or morula stages, caused by thermic, chemical or other physical agents. Mall found inflammatory processes of the uterus or ovum as the cause of fetal malformations. Von Recklinghausen,[15] the first to describe spina bifida, attributed the cause of anencephaly to the faulty closure of the primitive neural arch. The best recent classification of anencephalus was the one described by Mandruzzato,[16] who quoted the findings of Bauer. He stated that hydrocephalus produced not only anencephalus but

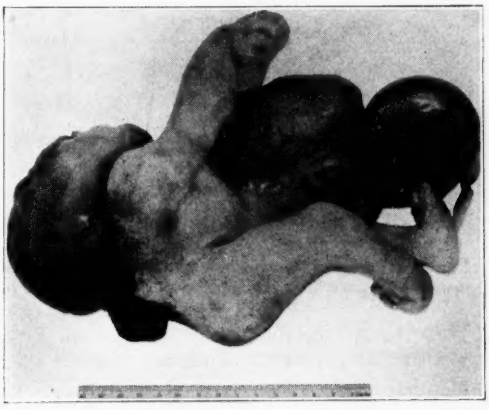

Fig. 2. Showing right club foot, meningocele, shortened spinal column and flattened nose

also a spasm of the cervical muscles. These muscular contractions cause an opening of the bones with the fulcrum under the atlas; and, secondarily, an absence of the neck and the union of the chin with the breast. This latter deformity is apparent in our case presented forthwith (Fig. 1).

The diagnosis of polyhydramnios is based on the findings of an acute or gradual increase in the size of the uterus out of proportion to the period of gestation. This is usually accompanied by a permanent uterine tension, which in acute cases may be very painful due to its sudden appearance. In extreme cases the abdominal distension is so enormous that the uterine outline may be lost and its size may become limited only by the capacity of the abdomen. These cases usually terminate by spontaneous abortion. The patient usually complains of general pressure symptoms, such as dyspnea, epigastric or precordial discomfort, distress and marked incapacity, with or without swelling of the limbs. There may be preternatural or convulsive fetal mobility with excessive

external ballotment. The fetal heart tones are usually dulled and, in extreme cases, may be difficult or even impossible to elicit. The fetal head or small parts may seem absent on palpation in the case of monstrosity. On bimanual examination we may find a patulous external os; and in extreme cases the external cervical os may become obliterated. An anencephalic

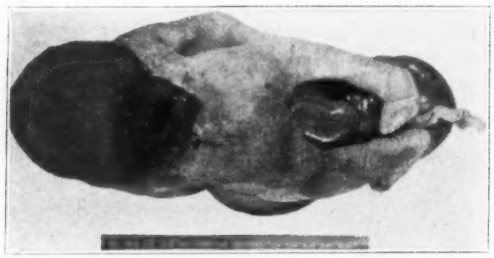

Fig. 3. Posterior view, showing absence of the neck, meningocele, right club foot and absence of cervical portion of spine

monster may present abnormal findings on bimanual examination and be confused with placenta previa, face or breech presentation. Polyhydramnios is most commonly confused with twins, ovarian cysts and ascites. Joseph B. DeLee advises roentgenological examinations of all cases of suspected twins or any case with questionable findings, especially if there is a family history of previous fetal malformations. This will serve to exclude anencephalic and other monsters.

Obstetrical x-ray examinations are becoming a routine in many lying-in-hospitals, clinics and in the work of many obstetricians. It is so in our practice for the past fifteen years. An obstetrical roentgenological examination suffices to make a positive diagnosis of pregnancy in doubtful cases. It helps to distinguish single from multiple gestation, and affords accurate information as to the position of the fetus and its relationship to the size of the pelvis. An expert may distinguish a dead fetus by noting the changes in the fetal skeleton, such as overlapping of the cranial bones. Fetal bones have been shown as early as the twelfth week and may be demonstrated with few failures during the 20th week and thereafter. In order to obtain a good picture, great detail and contrast are desirable. The patient should be prepared for the examination, which we usually do at the end of the thirtieth week, by the administration of an enema and by emptying of the bladder. A Potter-Bucky diaphragm should always be used, and a 14x17 film is necessary. The suspension of respiration during the exposure is essential. A direct anterior-posterior position is best, with the rays directed from above in the sagittal plane. The central ray should be directed into the pelvis 5 cm. posterior to the upper border of the symphysis pubis.

While the prognosis of hydramnios is usually favorable to the mother, except in rare extreme instances, it is not so to the child. The fetus is usually premature. According to Polak the fetal mortality is usually 75 per cent. The monster is usually stillborn or dies within a few hours or days following delivery. It is therefore quite

Fig. 4. Prenatal radiograph showing defect of cervical vertebrae and undeveloped head in 30th week of gestation

important to determine its presence early. The x-ray is the most reliable method in the diagnosis of fetal malformations in an abnormal pregnancy.

The treatment of polyhydramnios should be symptomatic and expectant. It usually suf-

fices to have the patient rest in bed until the membranes have ruptured, and the head is engaged so as to prevent a prolapse of the cord. If there is a rapid overdistention of the abdomen which causes alarming pressure symptoms, induction of labor by puncturing of the membranes may be advisable. In doing so, the liquor amnii should be allowed to drain slowly in order to prevent shock and postpartum hemorrhage. During labor, the treatment is expectant. Operative procedures other than version or perforation are unnecessary, as the fetus is commonly non-viable in cases of great amniotic distention or of complex monstrosities. In our case, the small size of the fetus and the apparently good health of the mother warranted no radical interference until the second stage of labor.

Report of Case: Mrs. E. B., white, aged 28 years, primipara, gave a history of general debility in 1928. A thorough physical examination at that time was negative, except for a secondary anemia, weakness, and loss in weight. She improved on the administration of physiotherapy and some tonics. Her mother was operated on a year ago for carcinoma of the cervix and improved considerably. Otherwise her past and family history revealed nothing of importance. Her last menstrual period occurred on February 20, 1932, and on physical examination two months later her estimated date of confinement was set for November 27, 1932. A thorough physical examination on May 17 revealed her to be in good health. Her blood pressure was 120 systolic and 80 diastolic. Weight was 113 lbs. A chemical and microscopical examination of her urine showed normal findings. Subsequent semimonthly examinations revealed normal progress of her pregnancy. On October 7, she came in complaining of rapid abdominal distention with pressure symptoms. An examination at that time revealed an acute hydramnios of moderate severity. Rectal examination revealed a patulous external os with a dilatation of about 2 cm. The abdomen was markedly distended, tense and tender to palpation. The fetal heart tones were audible, regular, but somewhat indistinct. A pelvic x-ray examination the same day showed a deformed, abnormally small fetal skeleton with a poorly developed spinal column, especially of the cervical vertebrae. There were no other abnormal findings in the mother. The patient was, therefore, sent home and was advised to stay in bed until signs of labor appeared. Five days later she entered The Chicago Memorial Hospital, with spontaneous rupture of the bag of waters, following mild labor pains for about one and a half hours. On examination at the hospital the pains were of moderate severity, occurring every four minutes and lasting about one half minute. Her abdomen was soft and small. The fetus was unusually small and in vertex position. Atypical findings on rectal examination suggested a face presentation and a complete dilatation of the cervix. A vaginal examination under anesthesia disclosed a right occipitomento posterior presentation of an acraniac monster. Manual rotation of the head and extraction with low forceps were successfully accomplished. Fetal heart tones stopped just before extration was attempted. The monster was stillborn. It was prematurely born at about the thirtieth week of gestation, weighed three and one-half pounds and measured 22 Cm. (Fig. 2-3). Pathologically, we may call it craniorrhachischisis hypogastroschisis. The cranial vault was incompletely closed (Fig. 2). The neck was absent with the chin resting on the sternum (Fig. 1-2). There was a meningocele of the cervical spine (Fig. 3), an absence of the nasal bones and a complete abdominal eventration with a cystic umbilical cord (Fig. 1 and 2). It was a female monster. The placenta was likewise small. It was expelled easily and there was no postpartum hemorrhage. A postmortem examination of the fetus was refused by the parents. The mother made an uneventful recovery and is now in perfect health.

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STUDY OF MEDICINE IN AUSTRIA

According to advices received from the Medical Faculty of the University of Vienna, there does not exist in Austria an actual license to practice medicine, the conducting of the medical practice depending on the possession of the doctor's diploma of an Austrian university and the proof of the Austrian citizenship.

Foreign students in Austria, on termination of their study—which is the same as for Austrians—receive the same doctor's diploma as Austrians do, with the exception that on diplomas given to foreign students a stamp is being affixed stating that without the proof of the Austrian citizenship the student is not allowed to practice in Austria.—*Jour. Assoc. Am. Med. Colleges,* May, 1933.

DOCTOR OR SPECIALIST

"A good doctor is made of a well-educated man who feels deeply the needs of the sick and believes himself called to live and work for their cure and the prevention of the same diseases in the well. This consecrated man must be educated in all that the labors of medical men in the past have discovered and be guided onward to the very boundary of our exact science and into the disputed territory of ignorance and perhaps of superstition. These excursions should be led by a veritable medical scout who has in practice all the arts of pioneering, adventure and discovery. The motive for all these efforts in education should be constantly kept prominent, and the forgetful medical student should be tripped by his teacher into perpetual consciousness that it is the duty of the doctor to his patient."—*Bayard Holmes.*

All half-baked or other underdone specialists should be exterminated. No physician has a right to that title unless he has been trained to avoid the pitfalls and dangers which may imperil the health and life of his patient. It is nothing short of a crime to turn a patient over to an uninstructed and ignorant novice and tell him to "go ahead and operate." Just so long as such a state of things exists, and unfortunately such a state does exist here and now, just so much worse it is for specialism and for the patient. Let every man have at least three years of varied training in general practice, let him devote all his time and energy to learning a specialty under a competent instructor for at least one year, then submit him to a test ("Regents," or Council of his Fellows), and we shall have specialists who are not an everlasting discredit to the profession. —*Irving Wilson Voorhees.*

THE FUNCTION OF A MEDICAL SOCIETY

A Medical Society is not a trade union, a business organization, nor a conference devoting its time to a discussion of hours, pay, cost, competition, restraint, or finance. It is an organization of men gathered together that they may better serve the public by keeping abreast of the times through the exchange of experience and the work of others. The work of the medical society is to make bigger, broader, kindlier men—men who can go out from its meetings not only more skilled and learned in their science, but more worthy the respect and confidence the degree Doctor of Medicine should bring. The medical society asks that men engaged in God's noblest calling work one with another and not one against another. It stands for honesty, truthfulness, progress, unity, and self-betterment that we may be better practitioners of our art and better men.—*Slyster.*

MATERNAL MORTALITY

"It is a strange thing that many intelligent people, both within and outside the medical profession, seize upon the notion that the United States has the highest maternal death rate in the world and shout from the housetops their implicit faith and belief in that statement. The gross statistical tables indicate that the statement is true. An analysis of all the factors involved in computing the statistics shows that it is not true. It is one thing to run through a column of numerals set opposite a list of various causes of death. It is quite another to examine one by one the certificates of death and to bring into the picture the various factors and circumstances involved in each death. The two methods frequently lead to surprisingly different conclusions."—Hall, Andy. Maternal mortality and common sense. *Illinois Medical Journal,* December, 1932.

WHAT SURGERY OWES TO LISTER

It would be useless to put here a long account of the misery and peril of compound fractures, wounds, operation cases, and maternity cases, in the year before "Listerism" came into general use. "Those of us who are old need not be reminded of it: and those of us who are young saw nothing of it." "The tragedy is too great for words: it was the burden of all military surgery, all hospital and private practice, all midwifery, in every city on earth for centuries."—*Stephen Paget.*

THE DISTRIBUTION OF PHYSICIANS IN VARIOUS COUNTRIES

The following statistics on the numerical relations of the physicians to the population, in various countries, have been taken from the journals of Germany and the Netherlands: In Austria there is a physician for every 837 inhabitants (in the capital, 520); in Spain, for every 1,000 inhabitants; Canada, 1,066 inhabitants (968); Great Britain, 1,069 (955); Hungary, 1,100 (300); Switzerland, 1,140; Greece, 1,166; Cuba, 1,170; Germany, 1,237; the United States, 1,326; Palestine, 1,333 (603); Denmark, 1,346; Estonia, 1,411; Netherlands, 1,417 (1,250); Danzig, 1,428; Belgium, 1,460; Latvia, 1,461 (487); Norway, 1,555 (600); France, 1,596 (630); Czechoslovakia, 1,666 (533); Luxemburg, 1,666 (1,250); Uruguay, 1,666; Portugal, 2,333; Sweden, 2,660; (1,427); Brazil, 2,666; Rumania, 2,879; Bulgaria, 2,900; Poland, 3,100, and Yugoslavia, 3,549. —Belgium Letter, March 11, 1933.—*Jour. A. M. A.,* May 13, 1933.

"WE" OR "THEY"

One man, in speaking of his lodge will always think of it in terms of "we." "Down at our lodge we do so and so! We are making such and such progress."

Another man will speak of his lodge in terms of "they." "Why don't they do this," and "If only they would do that."

"We" is inclusive and shows a real, live interest. "They" is exclusive, and ere long excludes the man who uses it.

"We" indicates that one belongs heart and soul. "They" signifies that one considers himself an outsider looking in.

Don't be a "They" man. Be a "We" man.

Even the little rivet which holds the steel girder in place can say, "We make this building."

The world moves forward because of "We" men and women.—*Virginia Masonic Herald.*

EVERY ETHICAL PHYSICIAN IN THE STATE SHOULD BELONG TO THE ILLINOIS STATE MEDICAL SOCIETY

In numbers there is strength. United we stand, divided we fall. A united medical profession can brush away any and all obstacles. It is next to impossible to find a really successful physician who has obtained fame outside the pale of organized medicine.

Are all the eligible physicians in your county members of your local medical society? If nonmembers of local society are discovered get busy and try to induce them to join at the earliest opportunity.

Since the publication of the last edition of the national medical directory, one thousand or more recent graduates and practitioners from other states have located in cities in Illinois. Great numbers have moved within the state from one city to another; an alarming number of physicians have died in the interim; hundreds have moved to other states and a similar number have come into Illinois from other commonwealths.

Below we publish as nearly as possible correct and up-to-date list of physicians residing in towns and cities in Illinois outside of Chicago and Cook County. No attempt had been made to indicate membership in local, state or national medical societies.

The final list of doctors residing outside of Cook County will appear in the forthcoming issue.

JOLIET (WILL)

Adelmann, Herman Jos., 810 N. Raynor Ave.; office, 108 N. Chicago St.
Ahlvin, Reno Arthur, 211 Nicholson St.; office, 415 Western Ave.
Andrew, Lloyd Brumund, 218 Farragut Pl.; office, 500 N. Ottawa St.
Arnold, Romus, (Braidwood); office, 405 Jefferson St.
Barclay, Chas. Kenny, 418 High St.; office, 114 N. Chicago St.
Barrick, Roy Gilmore, 404 Nicholson St.; office, 1900 Collins St.
Beckwith, Henry M., 325 Buell Ave.; office, 114 N. Chicago St.
Benischek, Maria Anna, 810 N. Raynor Ave.
Benischek, Werner Lothar, 810 N. Raynor Ave.; office, St. Joseph's Hospital
Blachly, Frank L., 119 N. Chicago St.
Bloomfield, Mat., 817 Mack St.; office, 108 N. Chicago St.
Bowles, Marion K., 107 Richards St.
Brannon, Londus, 313 Richards St.; office, 406 Clinton St.
Brown, Raymond Saml., 719 Oneida St.; office, 204 Scott St.
Carey, James Campbell, 110 S. Eastern Ave.; office, 500 N. Ottawa St.
Carey, John Francis, 806 Cornelia St.; office, 500 N. Ottawa St.
Carlin, Chas. John, 813 Williams St.; office, 208 Scott St.
Carr, Orcutt Nathan, 704 Oneida St.
Chmelik, Frank Jos., 202 Buell Ave.; office, 118 N. Chicago St.
Cohenour, Vincent Jacob, 308 Union St.; office, 201 N. Chicago St.
Courtney, John F., 800 Western Ave.; office, 114 N. Chicago St.
Curtiss, Chas. R., 502 Glenwood Ave.; office, 118 N. Chicago St.
Davis, Oliver C., 403 Richards St.; office, 323 Jefferson St.
Duffy, Jos. Eugene, 213 N. Hickory St.; office, 200 N. Center St.
Eldred, Chas. Dudley, 403 S. Eastern Ave.; office, 108 N. Chicago St.
Erickson, Hilding Walfred, 104 Virginia St.; office, 320 Rialto Sq.
Fahrner, Arthur Herman, 1004 N. Raynor Ave.; office, 200 N. Center St.
Fahrner, John, 104 Jersey Ave.; office, 200 N. Center St.
Fahrner, Walter J., 709 Douglas St.; office, 415 Western Ave.
Faulkner, Geo. Edward, 127 Comstock St.; office, 547 S. Chicago St.
Fitzbutler, James Henry (col.), 924 Collins St.
Fletcher, Wm. R., 401 N. Chicago St.
Flexer, Howard Norton, R. D. 4.; office, 106 N. Chicago St.
Flowers, Jos. C., 600 Western Ave.
Francis, Frank Doig, 608 Oneida St.
Frederick, Louis J., 420 Richards St.; office, 114 N. Chicago St.
Heintz, Leslie Jos., 707 Western Ave.; office, 108 N. Chicago St.
Higgins, Edward J., 606 N. Raynor St.; office, 404 Clinton St.
Houston, Alfred M., 815 N. Raynor Ave.; office, 201 N. Chicago St.
Houston, Grant, 102 Buell Ave.; office, 114 N. Chicago St.
Huey, Walter Bayard, 704 Western Ave.; office, 404 Clinton St.
Ivec, Martin J., 114 Buell Ave.; office, 900 N. Chicago St .
Jackson, Nicholas J., 515 S. Chicago St.
Johnson, Tessing S., 306 Buell Ave.; office, 415 Western Ave.
Kennedy, Raymond James, 709 3d Ave.; office, 103 S. Ottawa St.
Killinger, Donald Wm., 300 Farragut Pl.; office, 204 Scott St.
Kimball, Jos. Carl, 112 Arch Ct.; office, 222 N. Chicago St.
Klein, Bernard, 922 N. Raynor Ave.; office, 108 N. Chicago St.
Klemme, John J., Oliver Hotel
Krohn, John Wm., 802 Buell Ave.; office, 404 Clinton St.
Landmann, Paul Emanuel, 418 E. Clinton St.; office, 500 N. Ottawa St.
La Piana, Francis, 823 Cornelia St.; office, 315 Jefferson St.
Lennon, Robt. Watson, 118 Whitney Ave.; office, 108 N. Chicago St.
LeSage, Philip, 703 Western Ave.; office, 200 Jefferson St.
Lofdahl, Geo. Aleck, 909 Water St.; office, 500 2d Ave.
Longwell, Chas. Wm., 624 Clinton St.
Major, John C., 100 Manor Ct.; office, 403 W. Marion St.
Mayer, Edward John, Jr., 1200 N. Raynor Ave.
McGinnis, Phillip D., 226 Gardner St.; office, 547 S. Chicago St.
McKenzie, Ray Donald, 103 S. Nicholson St.; office, 500 N. Ottawa St.
McRobert, Wm. Alexander, May and Hutchins Sts.; office 405 Jefferson St.
McSweeney, Wayne Stephen, 606 Elgin Ave.; office, 406 Clinton St.
Misischia, Cosmo, 1403 Collins St.
Mitchell, John Ross, 103 Knox Pl.; office, 204 Scott St.
Munch, Louise Lucy, 104 Cagwin Ave.; office, 108 N. Chicago St.
Muncy, John Woolwine, 823 Cass St.
Palm, Walter Gilbert, 415½ Plainfield Ave.
Patterson, Harris Adair, 208 W. Marion St.; office, 315 E. Jefferson St.
Reilly, Wm. Stanley, 713 4th Ave.; office, 119 N. Chicago St.
Roberg, Fredk. Emanuel, 409 N. Ottawa St.; office, 114 N. Chicago St.
Sellards, Abram Goebel, 111 S. Eastern Ave.; office, 1501 Collins St.
Seron, Vaheh M., 1200 N. Raynor Ave.
Shreffler, Arthur Lee, 1212 Western Ave.; office, 500 N. Ottawa St.

Shroba, Raymond Victor, 113 California Ave.; office, 923 Collins St.
Shutack, John, 702 Herkimer St.; office, 1408 Collins St.
Stanton, Frank W., 408 Glenwood Ave.; office, 114 N. Chicago St.
Steen, Earl R., 308 Sterling Ave.; office, 106 N. Chicago St.
Stephen, Herman Ernest, 105 Cagwin Ave.; office, 114 Chicago St.
Stewart, Lena Madge, 404 E. Eastern Ave.; office, 500 N. Ottawa St.
Struzynski, Wladislaus M., 704 N. Chicago St.
Talbot, Edwin Robt., 504 Wilcox St.; office, 108 N. Chicago St.
Viscocil, Emil James, 106 N. Chicago St.
Wadsworth, Harold Vivian, 1427 N. Prairie Ave.; office, 204 Scott St.
Wagner, Thos. H., 209 Sherman St.; office, 204 Scott St.
Ward, Stephen Pierce, 626 Clinton St.; office, 822 Cass St.
Watson, Royal Latham, 705 2nd Ave.; office, 108 N. Chicago St.
Welch, Wm. Blackwood, Midland Ave.; office, 208 Scott St.
Wilcox, Bert, Geo., 203 West Park Front; office, 204 Scott St.
Wilhelmi, Lawrence John, 108 Westacre Rd.; office, 204 Scott St.
Williams, James Fredk. (col.), 609 E. Marion St.; office, 110 E. Jefferson St.
Williams, Thos. Blase, 623 S. Chicago St.
Wilson, Wm. Henry, 810 Cowles Ave.; office, 204 Scott St.
Woodruff, Geo. Francis, 207 N. Broadway; office, 500 N. Ottawa St.
Woodruff, Geo. Henry, 1201 Western Ave.; office, 500 N. Ottawa St.
Woodruff, Harry W., 1201 Western Ave.; office, 500 N. Ottawa St.
Woodruff, Lewis Wheeler, 1201 Western Ave.; office, 500 N. Ottawa St.
Worthley, Herbert Saml., 312 Richards St.; office, 116 N. Chicago St.

JONESBORO (UNION)

Lence, John J.
Nusbaum, John L.
Radcliff, Ernest
Rembe, Boyd C.
Whiteside, Robt. L.

JOPPA (MASSAC)

Jacobs, Robt. H.

JOY (MERCER)

Haly, Saml.
Miller, Wilbur Archie

JUNCTION (GALLATIN)

Mershimer, Wm. C. (See Shawneetown)

KAMPSVILLE (CALHOUN)

Woltmann, Fredk.

KANE (GREENE)

Krohn, Henry Walter

KANKAKEE (KANKAKEE)

Asselin, Geo. Francis, Kankakee State Hospital.
Ayling, Gilbert Haven, 512 S. Chicago Ave.; office, 258 E. Court St.
Bedard, Ulric A., 1164 E. Maple St.; office, 219 E. Court St.
Bergeron, Eugene D., 616 S. Chicago Ave.; office, 181 E. Court St.
Bergeron, Victor A., 763 S. Evergreen St.
Brown, John Archibald, 925 S. Chicago Ave.; office, 189 E. Court St.
Brown, Robt. Dwight, 313 N. 6th Ave.; office, St. Mary's Hospital
Bundy, Herman Winford, 629 S. Harrison Ave.; office, 258 E. Court St.
Cannon, Wm. Patrick, 581 S. Schuyler Ave.; office, 189 S. Schuyler Ave.
Cass, John Lovell, Kankakee State Hospital
Cohn, Wm., Kankakee State Hospital
DeLavergne, H. Eugene, 934 Lincoln Ave.
Eshbaugh, Aaron S., 1235 E. Merchant St.; office, 189 E. Court St.
Geiger, Chas. Willard, 989 S. Chicago Ave.; office, 189 S. Schuyler Ave.
Gier, Jacob Benj., Kankakee State Hospital
Gillette, Philip F., Kankakee State Hospital
Goodwin, Andrew J., (Bradley); office, 189 S. Schuyler Ave.
Greenman, Ernest Nelson, 1151 E. Court St.; office, 189 S. Schuyler Ave.
Guertin, Jos. A., 147 N. Evergreen Ave.; office, 258 E. Court St.
Hamilton, Edwin S., 585 S. Chicago Ave.; office, 258 E. Court St.
Hamilton, Fred. C., 986 E. Court St.; office, 258 E. Court St.
Hartman, Henry Albert, Kankakee State Hospital.
House, Arthur N., 570 S. Harrison Ave.; office, 189 E. Court St.
Hoverson, Emil Theodore, Kankakee State Hospital.
Hunter, James Richard, Kankakee State Hospital
Irwin, Geo. Earle, 1077 Cobb Blvd.; office, 189 E. Court St.
Lane, Shirley Wm., 230 S. Chicago Ave.; office, 189 S. Schuyler Ave.
Langlois, Harvey Louis, 991 S. Lincoln Ave.; office, 189 S. Schuyler
Madden, John Jos., Kankakee State Hospital
McCarthy, Harriet Cecilia Schwartz, Kankakee State Hospital
McCool, Dick Cauthen, Jr., Kankakee State Hospital
Morrow, Geo. Wm., Kankakee State Hospital
Nickerson, Anson LeRoy, 733 S. Greenwood Ave.; office, 258 E. Court St.
O'Laughlin, Danl. Jos., 728 Cobb Blvd.; office, 189 E. Court St.
Phelps, G. M., 196 N. Harrison Ave.
Rayer, Kenneth Nichols, 1033 S. Chicago Ave.; office, 260 E. Court St.
Roth, Jesse Henry, 807 Cobb Blvd.; office, 189 S. Schuyler Ave.
Smith, Chas. Kenneth, 859 S. Chicago Ave.; office, 189 E. Court St.
Spencer, Orson Bailey, 162 N. Dearborn Ave.
Sullivan, Francis J., Kankakee State Hospital
Uran, Benj. F., 207 N. Dearborn Ave.
Weaver, Isabel M., Kankakee State Hospital
White, Minor Elisha, 690 S. Greenwood Ave.; office, 189 S. Schuyler Ave.
Wilkinson, John Raymond, 839 S. Wildwood Ave.; office, 181 E. Court St.
Wilson, Ernest G., 894 S. Greenwood Ave.; office, 258 E. Court St.

KANSAS (EDGAR)

McKnight, Roy H.
Roberts, James Bray
Weaver, Floyd Bradley

KARBERS RIDGE (HARDIN)

Paris, James Lenard, Sr. (See Elizabethtown)

KARNAK (PULASKI)

Vinyard, Silas

KEENSBURG (WABASH)

Lovelette, Harry R.
Parmenter, Ben

KEITHSBURG (WABASH)

Allen, John S.
Coe, True Deloss
Keaveney, Thos. Eugene

KELL (MARION)

Simmons, Wm. Franklin

KEMPTON (FORD)

Ross, Wm. Grant

KENNEY (DE WITT)

Blome, Fredk. Michael

KEWANEE (HENRY)

Alexander, Julius S., 611 S. Tremont St.
Boswell, John Thos.
Carney, Thos. Bernard, 112 E. Central Blvd.; office, 102 W. 3d St.
Coffin, Chas. Albert, 419 E. Prospect St.; office, 104 W. 2d St.
Duncan, Ella M., 407 S. Tremont St.
Fortier, Clarence Albert, 335 E. Division St.; office, 108½ N. Tremont
Heaps, Warren T., 315 S. Tremont St.; office, 202 N. Tremont St.
Heflin, H. Nelson, 137 W. Division St.; office, 115½ W. 3d St.
Hoffman, Gideon H., 525 S. Chestnut St.; office, 106 W. 2d St.
McDermott, Peter John, 621 E. Prospect St.; office, 203 N. Tremont St.
Meier, David Edward, 117 W. Division St.; office, 226 N. Main St.
Melaik, Hattie B., 702 S. Chestnut St.; office, 217 N. Main St.
Noren, Gunner P., 424 S. Main St.; office, 107 W. 2d St.
Oliver, John H., 123 W. Division St.; office, 121 W. 2d St.
O'Malley, Wm. H.
Stewart, Fredk. Jarratt, 411 McKinley Ave.; office, 121 W. 2d St.
Trekell, John E., 112½ W. 2d St.
Veach, Harry Orr, 423 S. Tremont St.; office, 108½ W. 2d St.
Washburn, Wm. E., 2d and Tremont Sts.
White, Chas. Paul, 700 S. Main St.; office, 123½ N. Tremont St.

KEYESPORT (CLINTON)

Copple, Carroll Reid

KINCAID (CHRISTIAN)
Miller, Richard Jasper
Port, Fredk. James

KINDERHOOK (PIKE)
Dechow, Philip Herman

KINMUNDY (MARION)
Miller, Hugo
Stephens, C. Perry

KIRKLAND (DE KALB)
Ickstadt, Albert, Sr.
Leppert, Chas. Lynville

KIRKWOOD (WARREN)
Hall, Jos. Franklin
McClanahan, James M.

KNOXVILLE (KNOX)
Beecher, Chas. Edwin
Harms, Arthur H.
Moffett, Reuben Alvord

LACON (MARSHALL)
Bradford, Albert Wm.
Eddington, Murtell Mead
Eddington, Royal Lacey
Potts, Frank T.

LADD (BUREAU)
Dunn, Horace Bonsey
Green, Chas. Jos.

LA FAYETTE (STARK)
Church, Elmer E.

LA HARPE (HANCOCK)
Ash, John C.
Beacom, Danl. Fisher

LAKE BLUFF (LAKE)
Dewey, Elbert Eells (See Chicago)
Hislop, Margaret
Keyes, Thos. Bassett (See Chicago)
McKee, Clarence Stiles (See Chicago)
Patterson, Franklin (See Chicago)
Rissinger, Arthur Joe (See Lake Forest)
Sweeting, Getta Cater

LAKE FOREST (LAKE)
Andrews, Henry Claire, 611 Rosemary Rd.
Hagan, James Harry
King, Paz Garcia (See Chicago)
McCullough, Clifford Porter
McGrew, Donald John
Parmenter, Bert Newton
Proxmire, Theo. S.
Rissinger, Arthur Joe

LAKE FORK (LOGAN)
Denison, Lee L.

LAKEWOOD (SHELBY)
Eddy, James H.

LAMOILLE (BUREAU)
Wiman, Louis H.

LANARK (CARROLL)
Packard, Thos. I.
Scholes, Wm. John
Seyfarth, Mac Harper

LANSING (COOK)
Chapman, John Van Liew
Stockl, Anton
Van Wormer, Frank Burton (See Harvey)

LA SALLE (LA SALLE)
Ailes, Arlington, 1228 St. Vincent's Ave.; office, Hygienic Institute
Balensiefer, Otto, (Peru); office, 153 Marquette St.
Burke, Edmund Jos., 912 6th St.; office, 153 Marquette St.
Cox, Edward Frank, 635 Tonti St.; office, 149 Marquette St.; also office, (Oglesby)
Elliston, LeRoy Bertram, 715, 7th St.; office, 744 1st St.
Elliston, Robert Leo, 1051 Creve Coeur St.; office, 744 1st St.
Geiger, John Wolfgang (Peru); office, 654 1st St.
Greaves, Walter Wood, 1505 Bucklin St.; office, 654 1st St.
Haskins, Wm. Vincent, 660 8th St.; office, 654 1st St.
Hirsch, Saml., 521 1st St.
Kinder, Anna M. Hennessy, 637 1st St.
Lewis, John Francis, 341 Gooding St.; office, 605½ 1st St.
Maciejewski, Felix Joseph, 654 1st St.
McDonald, Justin Jos., 436 9th Pl.; office, 153 Marquette St.
Orr, Hugh Montgomery, 540 S. 5th St.; office, 111½ Marquette St.
Phillips, Herbert Lester (Peru); office, 654 1st St.
Ramenofsky, Abraham Isadore, 403 Wright St.; office, 654 1st St.
Scanlon, Wm., 645 Gooding St.; office, 654 1st St.
Schoch, Andrew Clarence, 457 9th St.; office, 9th and Sterling Sts.
Sellett, M. M., 425 Wright St.; office, 125 Marquette St.
Terrando, Jos. Stephen, 517½ 1st. St.
Urbanowsky, Leon Vincent, 641 11th St.; office, 111½ Marquette St.
Woods, Ralph Hueston, 537 5th St.; office, 153 Marquette St.

LATHAM (LOGAN)
Pope, Harry Overton

LAWRENCEVILLE (LAWRENCE)
Armitage, Ralph Boyce
Bryant, James B.
Cooley, Everett Monroe
Gordon, Ralph L.
Green, Wendell Irving
Kensler, Percy
Kimery, Carl W.
Kirkwood, Thos.
Lewis, Harlie V.
Petty, Frank F.
Trueblood, Ralph Randolph

LEAF RIVER (OGLE)
Bowerman, Hugh E.

LEBANON (ST. CLAIR)
Bittner, Jessie Josephine Hummel
Griesbaum, Philip
Renner, Fredk. Alex

LEE (LEE)
Shank, Wm. Lorenzo

LELAND (LA SALLE)
Chapman, Wm. E.

LENA (STEPHENSON)
Thompson, Leonard Martin
Vickery, Lee Otis

LEONORE (LA SALLE)
Sickley, Fred L.

LE ROY (McLEAN)
Jones, John Franklin
McConnell, Alpha Bernice Curry
Sargent, Edw. E.
Schulhof, Maurice Geo.
Thompson, Orris Martin
Tuthill, John A.

LEWISTOWN (FULTON)
Davis, Eli G.
Ewan, Robt. Thornton
Komasinski, Van Walter
Moorhouse, Chas. Vincent
Oren, Saml. Allen
Quinones, Marcos Aurelio
Reinertsen, Paul Danl.

LEXINGTON (McLEAN)
Bull, E. Martha
Langsdale, Guy H.
Scott, Thos. Craig
Scott, Walter P.

LIBERTY (ADAMS)
Davidson, Walter E., R. D. 2.
Snider, W. Frank

LIBERTYVILLE (LAKE)
Edwards, Clarence Owen
Galloway, Chas. R.
Martin, Fredk. Henry
Penney, Maurice Day
Stephens, Chas. N.
Taylor, John Lincoln

LINCOLN (LOGAN)
Balding, Ned Alvin, 703 N. Union St.; office, 602½ Broadway
Becker, Carl Fred., 221 N. Logan St.; office, 402 Broadway
Bradburn, Hubert Benj., 445 N. Union St.; office, 514 Pekin St.
Branom, Le Roy, 627 N. Union St.; office, 108 Kickapoo St.
Busby, Eugene Spence, Lincoln State School and Colony
Butler, James Homer, 204 N. McLean St.; office, 123 N. Kickapoo St.
Coleman, Wm. Walter, 229 N. Kickapoo St.; office, 123 N. Kickapoo St.
Comstock, Frank Henry, 861 S. State St.
Davis, Chester B., 626 College Ave.; office, 10 N. Logan St.
Drummy, Anthony Mathias, 110 Peoria St.; office, 610½ Broadway
Fearrington, James Cornelius Pass, 861 S. State St.
Fox, Wm. Warren, 861 S. State St.
Gaffney, Emory Clizbe, 518 College Ave.; office, 501 Pulaski St.
Hagans, Frank Marion, 205 Lincoln Ave.; office, 400 Broadway
Hart, Jennie Winship Parks, 506½ Broadway
Holben, Raymond, Lincoln State School and Colony
Houser, Frank C., 221 N. Logan St.; office, 108 N. Kickapoo St.
Knochel, Jos. Martin, 108 Hudson St.; office, 514½ Broadway
Lurie, Leah, 861 S. State St.
Mize, Edward Lindsay, Lincoln State School and Colony
Montgomery, Calvin Carlin, 222 College Ave.; office, 514½ Broadway
Orr, Francis Nicholas, 861 S. State St.
Perry, Wallace Brown, 226 Park Pl.; office, 315 Broadway

Rembe, Chas., 115 Pulaski St.
Rhoads, Lewis Thos., 319 Peoria St.; office, 501 Pulaski St.
Rooney, Geo. Eugene, Lincoln State School and Colony
Valenta, Ella Helen, 861 S. State St.
Waters, Phillip Sheridan, Lincoln State School and Colony

LITCHFIELD (MONTGOMERY)

Allen, Lee Gilbert
Bennett, Harry F.
Blackwelder, Fred C.
Griswold, Ross Wm.
Sihler, Chas. Harold
Sihler, Geo. Albert, Sr.
Sihler, Geo. Albert, Jr.
Zoller, Christian H.

LITTLETON (SCHUYLER)

Lottridge, W. M.

LITTLE YORK (WARREN)

Jewell, Merit S.

LIVINGSTON (MADISON)

Berry, Roy Clifford

LOCKPORT (WILL)

Gunderson, Anna Hussey
Kingston, Elwood A.
North, Will Carleton
Paddock, Walter R.
Roberts, Jack
Roblee, Leonard Field

LOMBARD (DU PAGE)

Boffenmeyer, Geo. E. (See Chicago)
Frank, Walter Wm.
Glasener, Chas. F.
Lackner, Frank
Oleson, Richard Bartlett
Reis, Jos. Hyacinth, Jr.
Woodworth, Philip Rollin

LONDON MILLS (FULTON)

Stoehr, Gustave Llewellyn

LONG POINT (LIVINGSTON)

Turner, Guy Franklin

LORAINE (ADAMS)

Black, Edwin T.

LOSTANT (LA SALLE)

Sandberg, Ivan Magnus

LOUISVILLE (CLAY)

Dillman, Howard Brown
Dillman, John Vardeman
Gibson, Elijah P.
Steely, Benj. Franklin

LOVEJOY (ST. CLAIR)

Williams, Earle (col.)

LOVINGTON (MOULTRIE)

Hoover, Walter Karl
Scaggs, Alex.

LOWPOINT (WOODFORD)

Burdon, Stephen Malcolm

LUDLOW (CHAMPAIGN)

Briggs, Francis Earle

LYNDON (WHITESIDE)

Harriman, Saml. S.

MACEDONIA (HAMILTON)

Sims, John Milton

MACKINAW (TAZEWELL)

Allen, Geo. Stewart
Fast, Harry DeWitte
Kilby, Edgar E.

MACOMB (McDONOUGH)

Adams, Arthur R.
Allen, Saml. Shelhorn
Bacon, Jos. Barnes
Carnahan, William Ernest
Davis, Jos. Henry
Duntley, Geo. Silas
Hartman, Wm. Michael
Hermetet, James Henry
Hermetet, John W.
Holmes, Jos. Bryce
Houston, Wm. Wilson
Jenkins, Benj. D.
Knappenberger, Geo. Emmett
Marrs, Richard F.
Miner, Elizabeth R.
Russell, Saml.
Russell, S. Frank
Schrader, Edwin Fredk.
Standard, Alphonso Perry

MACON (MACON)

Miller, Chas. Arthur
Plummer, Oscar F.

MADISON (MADISON)

Harlan, Lee Collins
Kiser, Chas. R.
Scopelite, Jos. Aloysius
Smith, Decatur Alvin

MAEYSTOWN (MONROE)

Maeys, Alvin Henry

MAHOMET (CHAMPAIGN)

Pearman, James Ora
Smith, Robt. Harlie

MANHATTAN (WILL)

Brannon, Geo. H.
Brannon, Londus Baker
Pederson, Lars Sedvard

MANITO (MASON)

Wright, Nelson A.

MANLIUS (BUREAU)

Mullin, Elmer L.
Williams, Saml. E.

MANSFIELD (PIATT)

Hulick, Lester Paul

MANTENO (KANKAKEE)

Burstein, Harry
Gollmar, Arthur Howard
Hinton, Ralph Thompson
Pekin, Thos. Jos.
Phipps, Orvan Abijah
Thomas, Russell Vernon

MAPLE PARK (KANE)

Trainor, Thos. H.

MAPLETON (PEORIA)

Egan, Thos. Sylvester

MAQUON (KNOX)

Knowles, Gilbert L.
Long, James U.

MARENGO (McHENRY)

Casely, Wm. J. C.
Eshbaugh, Walter S.
Fowler, Geo. Watson
Gooder, Wm. Verner
Sukumlyn, Stephen Wm.

MARINE (MADISON)

Holcombe, Robt. Lyndon
Ulrich, Everett R.

MARION (WILLIAMSON)

Baker, Alonzo Newton
Baker, Clark Everett
Felts, Harvey Austin
Fowler, Lorin Lycurgus
Gillespie, John Morgan, R. D.
Hall, Karl Herbert, R. D. 5
Harris, David H.
Hartwell, Dausa Dow
Hudson, Zach
Parmley, Jos. G.
Reid, Wm. Edward
Summers, Harmon Louis
Walker, Isaac Cecil
Woodside, Edward E.

MARISSA (ST. CLAIR)

Campbell, Jos. A.
Campbell, Jos. M.
Hays, Geo. Richard
Tweed, James R.

MAROA (MACON)

McLean, Wm. Thos.
Wood, Chas. M.

MARSEILLES (LA SALLE)

Clark, Paul R.
DeVries, Jerry
Stricker, Clifford John

MARSHALL (CLARK)

Mitchell, Earl Hick
Mitchell, Roscoe Addison
Pearce, Edw.
Rose, James John
Weir, John
Weir, Levi J.

MARTINSVILLE (CLARK)

Doak, Wm. H.
Rogers, William Morton
Wilhoit, Dellie L.

MASCOUTAH (ST. CLAIR)

Behrens, Wm. Herbert
Lischer, Robt. Franklin
Reinhardt, Oscar Frank
Scheve, Elmer Frederick

MASON CITY (MASON)

Cargill, Chauncey W.
Caton, Walter Marion
Rogier, Henry Oliver
Schuette, Wm. Henry

MATHERVILLE (MERCER)

Stephens, Wm. H.

MATTOON (COLES)

Baker, James Garfield, 1404 Wabash Ave.; office, 121 S. 17th St.
Bryan, Thomas Albert, 1317 Wabash Ave.; office, 213 S. 17th St.
Carter, Wm. Jos., 3021 Western Ave.; office, 1501 Charleston Ave.
Cole, Bert Raymond, 200 Wabash Ave.; office, 213 S. 17th St.
Coultas, Rufus James, 1516 Wabash Ave.; office, 1706a Broadway
Ferguson, Oscar Wallace, 1401 Wabash Ave.; office, 1622½ Broadway
Hardinger, Burt Horace, 3413 Western Ave.; office, 1601 Broadway
Hardinger, Paul Milton, 3304 Western Ave.; office, 1601 Broadway
Link, Jos. John, 1613½ Broadway
Morgan, Chas. Edwin, 3401 Western Ave.; office, 213 S. 17th St.
Neal, Lovell Arthur, 106 S. 16th St.
Nolan, James Frank, 67 Wabash Ave.; office, 1606½ Broadway

Nuzie, Saml. Bernard, 1621½ Charleston Ave.
Parrish, Bruce Downing, 1500 Wabash Ave.; office, 1704 Broadway
Richardson, Edmon E., 1313 Broadway; office, Demaree Bldg.
Summers, Albert Tower, 1618½ Broadway
Summers, Edmund, 1408 Wabash Ave.; office, 1618½ Broadway
Talbot, Mellville Clone, 212 S. 15th St.; office, 1703 Broadway
Voight, Chas. Bernard, 1613 Lafayette Ave.; office, 1702 Broadway
Wallace, Wm. Glenn, 112 S. 17th St.

MAUNIE (WHITE)
Giltner, Philip C.

MAZON (GRUNDY)
Breisch, Warren Franklin
Worley, Luther F.

McCLURE (ALEXANDER)
Heilig, Geo. N.

McHENRY (McHENRY)
Klontz, Clayton Wilson
Nye, Nicholas J.
Nye, Wm. A.
Wells, David Gillison

McLEAN (McLEAN)
Ritter, Chas. W.

McLEANSBORO (HAMILTON)
Clement, John Marion
Hall, Emory Sylvester
Hall, Wm. Wesley
Hyatt, Gilbert Thos.
Johnson, Chas. Wilson
Nation, Paris Milton

McNABB (PUTNAM)
McGee, Albert Corryden

MECHANICSBURG (SANGAMON)
Hill, John H.

MEDORAH (MACOUPIN)
Erwin, Oliver Perry
McGuire, Roy Herman
Wood, Claude Crossland

MENARD (RANDOLPH)
Barnett, Andrew Felix
May, Edwin Ralph
Stubblefield, Frank A.

MENDON (ADAMS)
Austin, Adelbert Morton (See Quincy)
Knapp, David Murton

MENDOTA (LA SALLE)
Avery, Wilbur Minor
Cook, Edgar Charles
Gleason, Michael
Harris, Chas. Oscar
Harris, Oscar P.
McDonald, Wm. Brown

MEREDOSIA (MORGAN)
Demke, Lucien Emil
Neville, Lois

METAMORA (WOODFORD)
Knoblauch, Jos. I.

METCALF (EDGAR)
Morton, Harry Thos.

METROPOLIS (MESSAC)
Cummins, Geo. Fowler
Decker, Virgil Owen
Dixon, Winfield Scott
Fisher, Jos. Allen
Garrett, Teresa Olive
Roberts, Thos. Willett
Trovillion, Milo H.
Hucker, Chas. Edw.
Willis, Omer M.

MIDDLEGROVE (FULTON)
Dehm, Chas. Henry

MIDDLETOWN (LOGAN)
Guttery, Wm. Vincent

MILAN (ROCK ISLAND)
Eddy, Warner L.
Wadsworth, Paul W.
Wiggins, Geo. A.

MILFORD (IROQUOIS)
Coen, Chas. Morgan
Green, Austin L.
Schlegel, Karl Wm.
Thayer, Wilbur F., Jr.

MILLBURN (R. D. WADSWORTH) (LAKE)
Jamison, Homer E.

MILLCREEK (UNION)
Heilig, Oliver M.

MILLEDGEVILLE (CARROLL)
Sword, Howard Russell

MILLERSBURG (MERCER)
Ohaver, Matthew

MILLSTADT (ST. CLAIR)
Rose, Fred
Tegtmeier, Loraine Edward

MILTON (PIKE)
Doss, Judson Irwin
Johnston, Frank

MINERAL (BUREAU)
Martin, Bertram A.

MINIER (TAZEWELL)
Holmes, Edgar Rea
Rost, John Fredk. W.

MINONK (WOODFORD)
Gordon, Noel Eugene
Millard, Homer Alanson
Morrison, Winfield Scott

MINOOKA (GRUNDY)
Coady, John Jay

MOKENA (WILL)
McMahan, Ernest Graham

MOLINE (ROCK ISLAND)
Anderson, Cyrus H.
Arp, August Henry, 1326, 16th St.; office, 508½ 15th St.
Arp, Louis Croft, 1525 29th St.; office, 508½ 15th St.
Barding, Lewis Danl. (See East Moline)
Beal, Albert Milton, 2601 6th Ave.; office, 514½ 15th St.
Beam, Hugh Atlee, 1430 25th Ave.; office, 1630 5th Ave.
Bennett, Henry Sumner, 2515 7th Ave.; office, 1514 5th Ave.
Carlson, Hada M. Burkhart (See Rock Island)
Carlton, Clarence Light, 1611 7th St.; office, 1630 5th Ave.
Davenport, Frank Noble, (4209 6th Ave., Rock Island); office 524½ 15th St.
Dondanville, Laurence Aloysius, 1721 11th Ave.; office 501 15th St.
Dondanville, Martin S., 925 17th St.; office, 501 15th St.
Edlen, Emil Alexius, 1428 12th St.; office, 425 15th St.
Ellis, Clifford Cowdell, 2718 15th Ave.; office 1630 5th Ave.
Flatley, Thos. Jos., 1801 14th St.; office 1514 5th Ave.
Freeman, David Barnard, 1100 23d Ave.; office, 1630 5th Ave.
Gardner, Frank H., 2517 12th St.; office, 507 15th St.
Gibson, Harrison Milton, 2201 Barnard Ct.; office, 501 15th St.
Hagler, Nathaniel G. (col.), 413½ 15th St.
Hanson, Jos. Kanute, 1702 11th St.; office 501 15th St.
Hauberg, Geo. David, 2002 15th St.; office, 1630 5th Ave.
Jones, Chas. D., 1941 12th Ave.
Koff, Salmon Arthur, 1215 15th St.; office, 501 15th St.
Kohler, Arvid Ernest, 1104 25th Ave.; office, 524 15th St.
Koivun, Geo. Wm., 1844 14th St.; office, 1514 5th Ave.
Leipold, Arthur Thos., 2515 27th St.; office, 1630 5th Ave.
McKelvey, Jos. D., 2106 15th St.; office, 506 15th St.
Meyer, Robt. C. J., 1815 3d Ave.
Neff, Emery Bowers, 2124 11th St.; office, 1529 3d Ave.
Nelson, David Roy, 2337 23rd Ave.; office, 521½ 15th St.
Oakley, Robt. Wm., 2121 15th St.; office, 501 15th St.
Otis, Eleanore Mabel Howe, 1894 14th Ave.; office, 1630 5th Ave.
Otis, Frank Jesse, 1894 14th Ave.; office, 1630 5th Ave.
Parsons, Harold Hunt, 2385 29th St.; office, 1630 5th Ave.
Pearsall-Block, Phebe Lorena, 917 26th St.; office, 1630 5th Ave.
Peterson, Carl Arnold, 421 19th St.; office, 518½ 15th St.
Rogers, Jennie Maud Thomas, R. D. 1; office, 1525 5th Ave.
Sargent, Evlan, 714 17th St.; office, 423½ 15th St.
Seids, John W., 1525 12th Ave.; office, 1514 5th Ave.
Sloan, Chester C., 902 26th St.; office, 1605 5th Ave.
Smith, Edward Vincent, 1630 5th Ave.
Taylor, Warren E., 1529 12th Ave.
Thomson, Thomas Lewis, 1635 24th St.; office, 1514 5th Ave.
Tremblay, Alfred, 702½ 18th Ave.
Vollmer, Maud Julia Otis, 1894 14th Ave.; office, 1630 5th Ave.
Wahlberg, Karl Wm., 2335 19th Ave.; office, 1514 5th Ave.
Wessel, Perry H., 3300 16th St.; office, 519½ 15th St.
West, Arthur Dudley, 2216 6th Ave.; office, 415½ 15th St.
Youngberg, Paul Philip, (3904, 7th Ave., Rock Island); office 1630, 5th Ave.

MOMENCE (KANKAKEE)
Gamet, Jos. Hirman
Lewis, John V.
Van Zant, Noble

MONEE (WILL)
Sullivan, Clement O.

MONMOUTH (WARREN)
Blair, Chas. Patton
Buchanan, Howard Jos. S.
Burgess, Chas. O.
Camp, Harold Manlove, 322 South B St.; office, 222 S. Main St.
Ebersole, Harry Glenn
Ebersole, Jos. R.
Fetherston, Ernest A.
Firth, John Oscar
Frymire, Wm. Arthur
Graham, Ralph
Hiett, Alva
Kampen, Harry Lewis
McMillan, Robt. C.
Sherrick, Joseph Leslie
Winters, Frank Chas.
Worrell, Joel Darrah

MONROE CENTER (OGLE)
Rice, Carroll Wendell

MONTICELLO (PIATT)
Blan, James Weaver
Bumstead, Chas. M.
Furry, Abe D.
Gilchrist-Wheeler, Virgil Martha (See Urbana)
Hawthorne, Roy Otway
Holmes, John Musser
Senseman, Mary Izetta

MONTROSE (EFFINGHAM)
Goebel, Albert Edmund
Gunn, Robt. Marney, R. D.

MOOSEHEART (KANE)
Nichols, John Delbert

MORRIS (GRUNDY)
Bowker, Frank C.
Graham, Fred Wilson
Kales, John Wm.
Larsen, John Bertram
Leach, Geo. A.
Perisho, Gordon Maxwell
Sachse, Wm. Gustavus
Whitman, Roscoe

MORRISON (WHITESIDE)
Fitzgerald, Frank
Lester, Rollin Harold
Maurits, Wm. J.
Pettitt, Herbert Leroy
Wright, James A.

MORRISONVILLE (CHRISTIAN)
Gibson, Archie Tilden
Seaton, Chas. M.
Thompson, Jerome

MORTON (TAZEWELL)
Brines, Orman Nelson
Endres, Fred Carl
Yoder, Henry Lee

MOUND CITY (PULASKI)
Hargan, John F.
Wesenberg, Wm. Robt.

MOUNDS (PULASKI)
Elkins, Homer Joshua
Hudson, Otis Talmage
Rife, Berry Volney
Sealy, Saml. T. (col.)

MOUNT AUBURN (CHRISTIAN)
Franklin, Wellington August

MOUNT CARMEL (WABASH)
Baird, Waldo Brown
Buchholz, Emil Albert
Couch, Gilbert S.
Craig, Cale Curtis
Elkins, Harold Albert
Keneipp, Edgar P.
McIntosh, John Jerome
Schneck, Sereno Watson
Utter, John Chas.

MOUNT CARROLL (CARROLL)
Colehour, Saml. Phillip
Mershon, Glenn Earl
Petty, Ray Humbert
Rice, Rollin B.

MOUNT ERIE (WAYNE)
Dixon, James Franklin
Roberts, Edwin Elmo

MOUNT MORRIS (OGLE)
Brown, Royal Oscar
Price, Chas. Jacob
Stengel, Henry Jesse
Warmolts, Lambertus (See Oregon)

MOUNT OLIVE (MACOUPIN)
Floreth, Gustav Adolphus
Hauser, Otto
O'Farrell, Patrick Francis

MOUNT PULASKI (LOGAN)
Connelly, Geo. Sullivan
Hildreth, Chas. Edward
Rankin, Horace R.
Van Hook, Forest Clyde

MOUNT STERLING (BROWN)
Ash, John G.
Dearborn, Chas. Bartlett
McGann, Raymond Chas.
Stokes, Chauncey M.
Wester, Edward Arthur

MOUNT VERNON (JEFFERSON)
Arendale, Alma Lillian, Centralia Rd.; office, 511 S. 10th St.
Black, John Curtis
Clark, Thomas Allen, 2001 W. Broadway; office, 1002 W. Main St.
Dixon, Claire Maurice, Salem Rd.; office, 1002 Main St.
Dixon, James Edmond
Folsom, Ephraim Melvin, 900 North St.
Frost, Arthur McKendree
Hall, Andy, 1002 Main St.
Hall, Chas. Wesley
Hall, Marshall Wesley
Hamilton, Clarence Orval, 1910 Broadway; office, 113½ S. 10th St.
Hamilton, James W.
Maxey, Moss, 202½ N. 10th St.; office, 113½ S. 10th St.
Parker, Wm. Garfield, Richview Rd.; office, 1002 Main St.
Peavler, Hugh
Poole, Chas. Judson
Ross, Wm. R., 600 Harrison St.; office, 906½ Main St.
Simons, Wm. Arthur
Smith, Elmer Maurice, 1800 Oakland Ave.; office, 1001½ Broadway.
Smith, Robert Russell, 1119 Maple St.; office, 1002 Main St.
Suttle, Orvel Addison, 405 Main St.; office, 1005 Main St.
Swift, H. Maxey, 1920 College St.; office, 814 E. Main St.
Taylor, Grant L.
Thompson, Sam. A.
Ward, Tood Pope, 820 North St.; office, 727 Broadway
Williamson, Thos. B.

MOUNT ZION (MACON)
May, Sheffie R.

MOWEAQUA (SHELBY)
Sparling, James Lyons

MULBERRY GROVE (BOND)
Brown, Dewitt Talmage

MUNCIE (VERMILION)
Michael, Oscar Willard

MURPHYSBORO (JACKSON)
Daniel, Harriett M., Atlasta Farm; office, 1328 Walnut St.
Ellis, Edward Kent
Ellis, Ira W.
Essick, Raymond Brooke
Horstman, Henry G., 2112 Division St.; office, 1328½ Walnut St.
Hrabik, John H., 1101 Mulberry St.; office, 1116½ Walnut St.
Keiser, Frank Martin
Minner, Louis A., (Carbondale); office, 1105 Chestnut St.
Ormsby, Oscar Burton, 1328 Manning St.; office, 113 S. 11th St.
Ransmeier, Robt. E.
Riseling, Chas. Everett, 230 N. 15th St.; office, 1337½ Walnut St.
Roth, Henry Herman, 2028 Division St.; office, 1400½ Walnut St.
Sabine, Ralph Stoddard, 1843 Spruce St.; office, 1318 Walnut St.
Wayman, Louis Roy, 2015 Walnut St.; office, 1400½ Walnut St.

MURRAYVILLE (MORGAN)
Waters, Chas. Edwin
Webster, Geo. Omar

NAPERVILLE (DU PAGE)
Bazell, Sidney Ross
Clancey, John H.
de Guevara, Alberto Ladron (See Chicago)
Law, Stanley Guy
Martin, Winfred Byrum
Migely, Walter Louis
Moser, Edward Stephan
Richter, Richard Biddle (See Chicago)
Rikli, Arthur Richard
Simpson, Eugene Grant
Truitt, Ruliff Lawrence
Whitehead, Clayton S.

NASHVILLE (WASHINGTON)
Eirich, Karl Walter
Green, Geo. A.
Rabenneck, Paul Benj.
Schroeder, Simon Peter
Vernor, Roscoe Conkling

NAUVOO (HANCOCK)
Kingsbury, Earl LaVerne
Shaw, Albert Morton

NEBO (PIKE)
Rutledge, James Hirst

NEOGA (CUMBERLAND)
Bigler, Sherman Edwin
Dougherty, Geo. Pitzer
Dougherty, Xenophon Best
Young, John Roscoe

NEPONSET (BUREAU)
Chiasson, Timothy L.

NEWARK (KENDALL)
Freeman, Harry E.

NEW ATHENS (ST. CLAIR)
Power, Julia
Schneidewind, Oswald Geo.
Trappe, Theodore Henry

NEW BADEN (CLINTON)
Asbury, Ernst Charles

NEW BERLIN (SANGAMON)
Maxwell, Thos. Rhea
McMillan, John Chas.
Taylor, Harriet S.

NEW BOSTON (MERCER)
Giles, Henry Wyley
McIntyre, Louis LeRoy

NEW CANTON (PIKE)
Gilbert, Geo. A.

NEW DENNISON (MARION P. O.) (WILLIAMSON)
Burns, John Erskine

NEW HOLLAND (LOGAN)
Carroll, William Franklin

NEW LENOX (WILL)
Holt, Janette Louise

NEWMAN (DOUGLAS)
Conn, Hugh Irving
Gillogly, Raymond C.
Rutherford, Cyrus

NEW PHILADELPHIA (McDONOUGH)
Havens, Albert

NEW SALEM (PIKE)
Andrew, Harry B.

NEWTON (JASPER)
Bland, Leland James
Fithian, Geo. Rolland
Franke, Wm. E.
Hutton, John Wm.
Jack, Winifred A. Yelton Robb
Kittle, Albert P.
Wattleworth, James R.

NEW WINDSOR (MERCER)
Rathbun, Fredk. Judd
Rathbun, Geo. Lawrence

NIANTIC (MACON)
Hall, Alonzo H.
Pope, Roy C.

NOBLE (RICHLAND)
Jones, Chas. L.

NOKOMIS (MONTGOMERY)
Burwell, Enoch A.
Hoyt, Jesse Marion
Irwin, Millard Holloway
Vaughn, Chas. Waldo

NORMAL (McLEAN)
Barber, Harry Clay
Cooper, Susan Rachel Merrill, 815 S. Fell Ave.; office, Illinois State Normal University.
Doud, Ray Wilson
Hartenbower, Geo. Earl (See Bloomington)
Loar, Ralph Rinehart (See Bloomington)
McCormick, Ferdinand C.
McNutt, James Carson (See Bloomington)
Pearis, Ralph P.
Penniman, Wm. Lloyd
Raber, Daniel Deronda (See Bloomington)

NORRIS CITY (WHITE)
Harrell, Jerome L.
Harrell, Wm. D.
Wakeford, Chas.

NORTH CHICAGO (LAKE)
Biehn, Jos. Favil (See Chicago)
Brace, Clifford C. C. (See Waukegan)
Budde, Alford Edward
Carson, Harry Raymond, Veterans' Administration Hospital
Cullins, John Graydon, U. S. Vet. Hospital
Daubenheyer, Miles Fredk., (518 N. Sheridan Rd., Waukegan); office, U. S. Vet Hospital
Hunsaker, Curtis Arthur, U. S. Vet. Hospital No. 105
Jerrell, Paul Mahlon, U. S. Vet. Hospital No. 105
Lake, Geo. Burt
Lewis, Claud
Losli, Ernest Jacob, U. S. Vet. Hospital
Malone, Leo Vincent
Mieczynski, Jos. Francis
Morgan, Howard Paul, U. S. Vet. Hospital No. 105
Nall, James Otho
Schelm, Geo. Wm., U. S. Vet. Hospital No. 105
Stallings, Russell Duke, U. S. Vet. Hospital No. 105
Stanul, Peter Jos.

OAKDALE (WASHINGTON)
McConaghie, Thos. Fulton
Tibby, Thos. Gordon

OAKFORD (MENARD)
Russell, James Clinton

OAK FOREST (COOK)
Brookhart, Jos. C., (548 E. 61st St., Chicago); office, Cook County Tuberculosis Hospital
Ferrier, Edgar Garland, Cook County Infirmary and Tuberculosis Hospital
Kulchinsky, Alexander
Peterson, Albert, Cook County Infirmary
Schiff, Morris Jos.
Schlack, Otto Chas., (2520 W. Adams St., Chicago); office, Cook County Tuberculosis Hospital
Shapiro, Sophie M., Cook County Infirmary and Tuberculosis Hospital
Worthington, Harry C., Cook County Tuberculosis Hospital

OAKLAND (COLES)
Barker, Reuben Allen

OAKLEY (MACON)
Clark, Elmer E.

OAKWOOD (VERMILION)
Snider, Wm. Thos.

OBLONG (CRAWFORD)
Henry, Geo. Herbert
Kirk, John W.
Kisner, Chas. H.
Mitchell, James M.
Sloan, Leslie Pearl

OCONEE (SHELBY)
Littlejohn, Lewis C.
Patterson, John Wm.

ODELL (LIVINGSTON)
Blough, Geo. F.
Morse, Arthur W.

ODIN (MARION)
Hamilton, Wm. N.

O'FALLON (ST. CLAIR)
Everett, Ernest Anthony
Shumaker, Chas. Henry
Trippel, Edw.

OGDEN (CHAMPAIGN)
Agnew, T. Lee

OGLESBY (LA SALLE)
Beadles, Chas. H.
Cox, Edward Frank (See La Salle)
Huggard, Timothy Stephen
Rock, John Lestrange

OHIO (BUREAU)
O'Malley, Jos. Michael

OKAWVILLE (WASHINGTON)
McIlwain, James, Jr.
Schmidt, Herman

OLIVE BRANCH (ALEXANDER)
Lottman, Wm. August (See Cairo)

OLMSTEAD (PULASKI)
Caraker, Oscar

OLNEY (RICHLAND)
Barthelme, Francis Jos. Lorraine
Fildes, Vernon Sylvester
Fritschle, Wm. E.
Hickman, Homer V.
King, Ralph
Telford, Alexis T.
Trotter, Geo. S.
Weber, Bernard Aloysius
Weber, Frank Clifford
Weber, Frank Jos.
Weber, Geo. Theo.
Weber, James August
Weber, J. Cornelius
Weber, Lawrence, Frank, Olney Sanitarium
Weber, Paul Cornelius

OMAHA (GALLATIN)
Barger, Ephraim S.
McGuire, Wm. Edward

ONARGA (IROQUOIS)
Baker, Nellie M.
Brown, Chas. F.
Johnson, Fred Ambrose
Shawl, John Ambrose

ONEIDA (KNOX)
Ash, Mary Ella
Bedford, Richard J.
Johnson, Wm.
Stone, Jacob Clay

OPDYKE (JEFFERSON)
Jack, Robert Berry

OQUAWKA (HENDERSON)
Eads, Coleman J.

ORANGEVILLE (STEPHENSON)
Bolin, Robt. Siegfried
Rockey, Laurence Frank

OREGON (OGLE)
Beveridge, James M.
Bowen, Wm. Stansberry
Cottlow, Benj. Augustus
Kloster, Grant Melvin
Schneider, Leo Elmer
Warmolts, Lambertus, also office (Mount Morris)

ORIENT (FRANKLIN)
Williams, Chester Henry

ORION (HENRY)
Bigglestone, Harry Clinton
Gustafson, Jos. Ansley

OSWEGO (KENDALL)
Churchill, Alfred H.
Weishew, Lewis Jerome

OTTAWA (LA SALLE)
Blue, Wm. S., 222 Christie St.; office, 628 Columbus St.
Clune, Philip J., 603 Main St.
Dunham, Royal Wade, 106 St. James St.; office, Ottawa Tuberculosis Sanatorium.
Dwyer, Danl. Raymund, 723 Clinton St.; office, 112 W. Madison St.
Edgcomb, John Harold, 714 Chapel St.; office, 630 Columbus St.
Fischer, Haydn Lyle, 431 Congress St.; office, 700 La Salle St.
Fitch, Ella, 716 Columbus St.
Fread, Wm. Phineas, 215 Prospect Ave.; office, 700 La Salle St.
Hatheway, Elmathan P., 639 Webster St.; office, 628 Columbus St.
Herrick, Minerva, 1434 Ottawa Ave.
Jacobs, Chas. Wm., 635 Columbus St.
Jamieson, Wm. Henry, 1448 Ottawa Ave.; office, 700 La Salle St.
Klumpner, Geo., 515 Congress St.; office, 628 Columbus St.
Kneussl, Maximilian Bernard, 112 Madison St.
May, Austin E.
O'Neill, Jos. Thos., Birch Lawn Pl.; office, 112 Madison St.
Parr, Saml. E., 507 E. Main St.; office, 628 Columbus St.
Pettit, Roswell Talmadge, 323 Pearl St.; office, Illinois Valley Hospital.
Pike, Wm. Arthur, 728 Columbus St.
Pomeroy, Paul Griffith, 919 W. Madison St.; office, 630 Columbus St.
Roberts, Albert Jay, 414 Christie St.; office, 628 Columbus St.
Sawyer, Matthias H., 528 2d Ave.; office, 636 Columbus St.
Smith, Durand, Ottawa Tuberculosis Sanatorium.
Telford, Henry Clyde, 723 W. Madison St.; office, 628 Columbus St.
Vanatta, Clarence Fisher, 539 2d Ave.; office, 628 Columbus St.

OWANECO (CHRISTIAN)
Millhon, Homer Benj.

PALESTINE (CRAWFORD)
Gettinger, Martin L.
Ikemire, John Andrew
Ikemire, Marjorie Louise
Illyes, Levi Roscoe
Loesch, Geo. Edw.
Price, Barlow Lloyd
Taylor, Orlando G.

PALMER (CHRISTIAN)
Miller, Jos. F.

PALMYRA (MACOUPIN)
Doan, Thos. D.
McMahon, Martin
Powell, Wm. L.

PANA (CHRISTIAN)
Alderson, Albert Lee
Alderson, John Hagler
Bullington, Grover C.
Burgess, Walter
Coffey, D. Fletcher
Danford, Roscoe Conklin
Eberspacher, Fredk. John
Hager, Wm. Francis
Littlejohn, Dana Meade
Miller, Louis Henry

PANAMA (MONTGOMERY)
Needles, Arthur Stone

PARIS (EDGAR)
Apple, Wm. Rufus
Bittner, Wm. Ameal
Clinton, Bertha Lawton
Conklin, Winfred E.
Davis, Floyd M.
Dorris, Nettie Austin Murphy
Dugan, Wm. Jay
Fleener, Paul Elvin
Gumm, Albert Gottlieb
Hoff, Weller H.
Hunt, Geo. H.
James, Frederic J.
Junkin, Homer David
Laughlin, Elmer O.
Link, Francis M.
Martin, John Wesley
McCord, Thos. Chester
Musselman, James T.
Shipley, Clark Lee
Tygett, Glenn Jos.
Williams, Byron G. R.

PATOKA (MARION)
Ducomb, Mirza Phillip
Hudspeth, Jos. C.
Murfin, Warren W.

PAWNEE (SANGAMON)
Babb, Addie Helen
Bain, Paul Eve
McTaggart, Thos. A.
Yeck, Chas. Wm.

PAWPAW (LEE)
Clark, Edwin L.
Fleming, Saml. Clifton
Peters, Arthur James

PAXTON (FORD)
Brown, John Bernard
Kelsheimer, Ira D.
Lund, John Arthur
McKinney, Clarence David
Park, Edmund Calvin
Peterson, Martin David E.

PAYSON (ADAMS)
Fortune, Hannibal Claude

PEARL (PIKE)
Thurmon, Francis Marion

PEARL CITY (STEPHENSON)
Ascher, John Peter
Woker, John G.

PECATONICA (WINNEBAGO)
McCulley, Robt. Arends
Schnell, Benj. Casper Clifford

PEKIN (TAZEWELL)
Allen, Arthur E.
Balcke, Louis Andrew, 630 Washington St.; office, 28 S. 4th St.
Balcke, Wm. Andrew, 410 Washington St.; office, 28 S. 4th St.
Crawford, Neal Dow, 114 S. Capitol St.
Emmerling, Carl James, 521 Ann Eliza St.; office 12½ S. 4th St.
Gale, Fernando C., 339 S. 4th St.
Glasford, Saml. Theo., 306 S. 4th St.; office, 333 Court St.
Holmes, Lydia Heckman, 519 Elizabeth St.
Manchester, Howard D.
Muehlmann, Carl G., 701 Washington St.; office, 357 Court St.
Needham, Wm. Spencer, Buena Vista Apts.; office, 410 Elizabeth St.
Teter, Lloyd Finley, 34 S. 4th St.
Walker, Hartley W., 341 S. 8th St.; office, 333 Court St.
Walker, Wayne Rose, 714 S. 8th St.; office, 341 Court St.
Wright, Nelson Amos, Jr., 300 Buena Vista Ave.; office, 12 N. 5th St.

PEORIA (PEORIA)
Adelsberger, Bransford Louis, 107 Farmington Rd.; office, 410 Main St.
Allen, Albert Frank, 614 Wayne St.
Askew, Sherman A. (col.), 110 Lincoln Ave.; office, 209 Smith St.
Auer, Ulysses Grant, Peoria State Hospital.
Bacon, Jay Harvey, 202 Columbia Terr.; office, 410 Main St.
Baker, Arthur Earl, 218 Missouri St.; office, 333 Fulton St.
Barbour, Edward Everett, 410 S. Bourland Ave.; office, 333 Fulton St.
Barbour, Orville Everett, 601 N. Sheridan Rd.; office, 333 Fulton St.
Bellas, Jos. Edward, 920 Hamilton Blvd.; office, 333 Fulton St.
Bierly, James Roy, 112 N. Orange St.; office, 2135 S. Adams St.
Blender, Wm., 843 Knoxville Ave.; office, 333 Fulton St.
Blickenstaff, Augustus J., 211 N. Glenwood Ave.; office, 410 Main St.
Bowen, Wilbur Lorenzo, 806 E. McClure St.; office, 212 S. Jefferson St.
Boynton, Lloyd V., 106 N. Maplewood Ave.; office, 2115 S. Adams St.
Bradley, Edwin H., 112 High St.; office, 405 Main St.
Bradley, Robt. C., 200 W. Virginia St.; office, 410 Main St.
Brant, Effie McCall Croft, 211 W. McClure Ave.
Brobst, Chas. David, 101 S. Adams St.
Brobst, Chas. H., 107 High St.; office, 101 S. Adams St.
Burby, John E., 520 Bradley St.; office, 405 Main St.
Burhans, Ernest Chas., 811 N. Madison Ave.; office, 101 S. Adams St.

Burhans, Levi Alden, 208 Bigelow St.; office, 101 S. Adams St.
Burt, Elliott Prentice, 382 Callender Ave.; office, 1710 N. Sheridan Rd.
Causey, Fredk. Archibald, 2108 Knoxville Ave.; office, 410 Main St.
Chittick, Alex., 405 Main St.
Coffey, Lee Mathew, 308 Bigelow St.; office, 212 S. Jefferson St.
Cohen, Geo. Louis, 404 Evans St.; office, 321 Fulton St.
Collins, Clifford U., 553 Moss Ave.; office, 333 Fulton St.
Cooper, Ethel Florence, 409 E. Republic St.; office, 3028 S. Adams St.
Cooper, Hugh Edwin, 164 Summit Blvd.; office, 405 Main St.
Corcoran, Albert L., 103 Moss Ave.; office, 1501 Main St.
Costeff, Harry, Peoria State Hospital.
Cotton, James Allen (col.); 712 N. Jefferson St.; office, 110 Lincoln Ave.
Coyle, Helen Carol, Mitchell Farm; office, 106 N. Glen Oak Ave.
Cusack, Patrick Aloysius, 922 Hamilton Blvd.; office, 725 2n Ave.
Cutter, Wm. Wrigley, 227 Grand View Dr.; office, 400 Main St.
Davis, Elias L., 406 N. Glen Oak Ave.; office, 101 S. Adams St.
Davis, Franklin S., 712 Hamilton Blvd.
Davis, Willis H., 108 S. Jefferson St.; office, 333 Fulton St.
Decker, Fred Henry, 2313A Western Ave.; office, 410 Main St.
Diller, Harold Francis, 104 Knoxville Ct.; office, 410 Main St.
Domke, Edward P., Peoria State Hospital.
Duane, Jos. Francis, 630 Moss Ave.; office, 333 Fulton St.
Durkin, Harry Anthony, 101 Roanoke Ave.; office, 333 Fulton St.
Eastman. Joel Albert, 1212 N. Monroe St.; office, 101 S. Adams St.
Easton, Milo Tripp, 219 Barker Ave.; office, 410 Main St.
Easton, Sidney Harris, 104 W. Moss Ave.; office, 333 Fulton St.
Eicher, Wm. B., 305 N. Madison Ave.
Eichhorn, Herman G., 402 Barker Ave.; office, 101 S. Adams St.
Ekonomou, Alexander Geo., 408 Main St.
Ewers, Jos. Bernard, 204 N. University St.; office, 317 Fulton St.
Farnum, Chas. Geo., 337 Parkside Dr.; office, 333 Fulton St.
Feiker, Herman A., 1426 Western Ave.
Fey, David Wm., 427 Moss Ave.
Finnell, Jos. J. L., 200 N. Sheridan Rd.; office, 216 S. Adams St.
Fischer, Clarence Geo., 124 Barker Ave.; office, 333 Fulton St.
Floyd, Thos. Waller, 208 Ellis St.; office, 410 Main St.
Foerter, Adolph J., 657 Moss Ave.; office, 126 N. Monroe St.
Foster, Allan Adams, 1220 Columbia Terrace; office, 2222 S. Adams St.
Garrett, Emmett A., 2019 Knoxville Ave.; office, 408 Main St.
Gillespie, Edwin Simpson, 2913 N. Adams St.
Goodwin, Perry Bird, 211 Prospect Rd.; office, 530 N. Glen Oak Ave.
Gott, Wm. Arvel, 221 Missouri Ave.; office, 333 Fulton St.
Green, Rolland Lester, 1609 N. Glen Oak Ave.; office, 101 S. Adams St.
Haas, Ferdinand Franklin, 214 N. Institute St.; office, 408 Main St.
Haley, Dorman Elroy Elbridge, 1121 N. Glendale Ave.; office, 229 S. Adams St.
Hall-Kent, Alcina Edith, 810 N. Glen Oak Ave.
Hammitt, Frank Coleman, 1909 N. University St.; office, 212 S. Jefferson St.
Hanna, Robt. A., 815 Moss Ave.; office, 405 Main St.
Haskins, Henry Ford, 113 N. Elmwood St.; office, 408 Main St.
Hawkins, Herman Weitzel, 1802 Knoxville Ave.
Heiberger, Chas. Jackson, Jefferson Hotel; office, 333 Fulton St.
Hession, Thos. Stephen, 204 Barker Ave.; office, 205 N. Adams St.
Heymann, Bernard Benj., Jefferson Hotel; office, 700 S. Adams St.
Hinckle, Wm. Albert, 212 Parkside Dr.; office, 333 Fulton St.
Holbrock, Wm. Herbert, 415 Archer Ave.; office, 410 Main St.
Honce, Alice, 1800 N. Madison St.
Horwitz, Sandor, 928 Hamilton Blvd.; office, City Hall.
Howard, Everett Edmunds, 215 Cooper St.; office, 101 S. Adams St.
Hubbard, Argal Ernest, 1509 N. Perry Ave.; office, 212 S. Jefferson St.
Hund, John, 219 Malone St.
Ives, Leon C., 518 Barker St.; office, 410 Main St.
James, Peter Franklin, 109 Melbourne Ave.; office, 333 Fulton St.
Jenkins, James Thos., 105 Edgehill Ct.; office, 333 Fulton St.
Jenkins, Wm. T., 333 Fulton St.
Jennings, John Buford, 511 Prospect Ave.; office, 410 Main St.
Johnston, Wm. Adams, 415 Prospect Ave.; office, 333 Fulton St.
Jones, Perry Franklin, 110 Alice Ave.; office, 101 S. Adams St.
Kannapel, Amzi Peter, 923 Knoxville Ave.; office, 333 Fulton St.
Kelly, Everett Clyde, 208 N. University St.; office, 410 Main St.
Kesling, Floyd Jennings, 701 Western Ave.
King, Ray Woizeske, 211 Nowland St.; office, 2301 S. Adams St.
Kirby, David Dennison, Big Hollow Knoxville Rd.; office, 310½ Liberty St.
Knopp, Alfred Averill, 1800 Columbia Terr.; office, 333 Fulton St.
Knowles, Henry Blaine, Peoria State Hospital.
Levitin, Emil Zola, 200 Rebecca Pl.; office, 333 Fulton St.
Lewis, Geo. Cecil (col.), 903 6th Ave.; office, 321 Main St.
Limmer, Geo. L., Pere Marquette Hotel; office, 301 S. Adams St.
Lucy, Lucia Hazzard, 310 N. Orange St.
Margaret, Clarence Wm., 820 E. McClure Ave.; office, 333 Fulton St.
Magee, Harry Bayne, 334 Crescent St.; office, 408 Main St.
Major, Wm., 2500 Western Ave.; office, 3030 S. Adams St.
Malcolm, Wm. Alexander, 949 N. Glen Oak Ave.; office, 410 Main St.
Marrs, Wm. T., 515 Prospect Ave.
Massey, Wm. Hinkle, 927 W. Virginia Ave.
Maurer, Fredk. Henry, 705 E. McClure Ave.; office, 333 Fulton St.
Mauricau, Van Buren, (Morton); office, 408 Main St.
McCorvie, John Edward, 516 W. Armstrong St.; office, 212 S. Jefferson St.
McCuskey, John Milton, 734 Linn St.; office, 333 Fulton St.
McGrath, Philip Raphael, 333 Fulton St.
McLaughlin, Saml. Mathew, 1416 Western Ave.
McMahan, John Page, 105 N. Sheridan Rd.
Meixner, Fred Morris Frankfort, 821 Moss Ave.; office, 410 Main St.
Mellen, Charles S., 500 E. Arcadia St.; office, 421 S. Adams St.
Meloy, John Earle, 201 W. Armstrong St.
Meloy, Margaret Babcock, 201 W. Armstrong St.; office, 405 Main St.
Michael, Wm. Alexander, 214 N. Bourland Ave.; office, 410 Main St.
Michell, Geo. Washington, 106 Glen Oak Ave.
Miller, Sumner Marcy, 100 Malvern Lane; office, 410 Main St.
Morgan, Johanna Wilhelmina Bauer, 717 Starr St.
Morrill, Frank Gillingham, 942 N. Glen Oak Ave.; office, 408 Main St.
Nevins, Herbert, 1215 E. Republic St.
Nystrom, Elmer Edwin, 1830 N. Jefferson Ave.; office, 400 Main St.
Page, Theodore Herbert, 560 Moss Ave.; office, 333 Fulton St.
Parker, Donna M. Theodosia, 508 Bradley Ave.; office, 301 S. Adams St.
Parker, George Wm., 330 Parkside Dr.; office, 410 Main St.
Parker, James W., 508 Bradley Ave.; office, 301 S. Adams St.
Peattie, Saphie Eliza Bennett, 512 Bradley Ave.
Petri, Kenneth Norman, 406 College St.; office, 2825 N. Adams St.
Phillips, Albert Duane, 202 S. Maplewood Ave.; office, 3015 S. Adams St.
Pintler, Hiram Edgar, 311 Indiana Ave.
Pintler, Howard Lewis, 615 Atlantic Ave.; office, 216 S. Adams St.
Plummer, Amzi Smith, 410 Knoxville Ave.; office, 101 S. Adams St.
Pollak, Maxim, Peoria Municipal Tuberculosis Sanitarium.
Powell, Vance M., 1315 N. Jefferson Ave.
Price, Walter Jewell, 112 S. Bourland Ave.; office, 405 Main St.

Richardson, Kline M., 115 E. Corrington St.; office, 405 Main St.
Roberts, John Charles, 418 W. McClure St.; office, 212 S. Jefferson St.
Robertson, Molly Devereaux, Peoria State Hospital.
Robison, Harriet Nevins Ballance, 165 Flora Ave.
Roche, Wm. James, 715 Pacific Ave.; office, 410 Main St.
Roskoten, Oliver J., 114 Flora Ave.
Russo, Carmen Frank, Peoria State Hospital.
Rutherford, Leslie, 207 N. Maplewood Ave.; office, 212 S. Jefferson St.
Rutledge, Richard Martin, 317 N. Douglas St.; office, 405 Main St.
Seaburg, Elmer Walfred, 1017 N. Glendale Ave.; office, 410 Main St.
Sedgwick, Howard M., 909 Knoxville Ave.
Seward, Geo. Ralph, 1110 Smith St.; office, 405 Main St.
Shapiro, Jos., Peoria State Hospital
Shepperd, James Douglas (col.), 1209 2nd Ave.; office, 202 Main St.
Sibilsky, Carl Edward, 204 N. University St.; office, 400 Main St.
Sloan, John F., 233 N. Underhill St.; office, 410 Main St.
Smith, Geo. W., 801 Bigelow Ave.; office, 125 N. Jefferson St.
Sneller, Chas. Danl., 173 Flora Ave.; office, 212 S. Jefferson St.
Sours, James Ward, 225 Missouri Ave.; office, 2106 S. Adams St.
Sparks, Jos. P., 604 W. Barker St.; office, 408 Main St.
Sprenger, Arthur, 218 W. McClure Ave.; office, 333 Fulton St.
Spurck, Peter Thomas, 1204 North St.; office, 333 Fulton St.
Stacy, Geo. Herbert, 508 N. Douglas St.; office, 410 Main St.
Stone, Esther A. Hart, Peoria State Hospital.
Strause, Clifford Philip, 3121 Western Ave.; office, 212 S. Jefferson St.
Sutton, Robt. Mage, 314 S. Douglas St.; office, 405 Main St.
Swanson, Paul Edgar, 315 Livingston St.; office, 1426 Western Ave.
Thomas, Charles D., 464 Moss Ave.; office, 101 S. Adams St.
Trewyn, Bryant Hooper, 407 Warren St.; office, 2522 S. Adams St.
Turner, Clifton Sherwood, 608 Cooper St.; office, 333 Fulton St.
Turow, Irving, Peoria State Hospital.
Ulrich, Julius H., 709 Hayward St.; office, 403 Main St.
Vonachen, Harold Albert, 109 W. Virginia Ave.; office, 212 S. Jefferson St.
Vonachen, John Rudolph, 201 S. Maplewood St.; office, 410 Main St.
Ward, Clarence Vincent, 554 Peoria Ave.; office, 410 Main St.
Washburn, Geo. Ulysses, 448 Moss Ave.; office, 333 Fulton St.
Waugh, Fred Duvall, 1203 E. McClure Ave.
Weinkauff, Wilbur Herman, 429 Linn Ave.; office, 333 Fulton St.
Welton, Carroll B., Galena Rd.; office, 410 Main St.
Wharton, Jos. E., 110 S. Jefferson St.
Whipple, John A., 234 N. Madison Ave.
Whipple, Lewis Allen, 2508 Knoxville Ave.; office, 423 S. Adams St.
Whipple, Walter Burleigh, 234 N. Madison St.
Whitlock, Merle Horton, 214 Hanssler Pl.; office, 410 Main St.
Wiens, D. Peter, 112 Fredonia Ave.; office, 405 Main St.
Will, Otho B., 204 Randolph St.
Williams, Herbert Lewis. (See Bartonville.)
Williams, Wright C., 201 Rebecca Pl.; office, 333 Fulton St.
Wilson, Chas. P., 1609 Prospect St.; office, 127 S. Jefferson St.
Wilson, Henry Mason, 1510 Columbia Terr.; office, 410 Main St.
Wyatt, Wm. Walter, (1536 Prospect Rd., Peoria Heights); office, 101 S. Adams St.
Zeller, Fredericka C., 1007 Hamilton Blvd.
Zeller, Geo. Anthony, Peoria State Hospital.
Zook, Erle Will, Peoria State Hospital.

PEORIA HEIGHTS (PEORIA)

Blake, Clyde Geo., 1107 Prospect Ave.
Wyatt, Wm. Walter. (See Peoria.)

PEOTONE (WILL)

Holzhauer, Frank Arthur
Norman, Edith Emilie
Turner, James W.

PERCY (RANDOLPH)

Barr, Clarence Melvin

PERRY (PIKE)

Denny, Alden Ray

PERU (LA SALLE)

Balensiefer, Otto. (See La Salle.)
Geiger, John Wolfgang. (See La Salle.)
Nauman, Benj. J.
Ream, Walter Joseph
Schneider, Frank Carl Emil
Taylor, Fred Clark
Yoder, Orie Chris

PESOTUM (CHAMPAIGN)

Hilgenberg, James Francis

PETERSBURG (MENARD)

Moulton, Horace P.
Newcomer, Irving
Plews, Thos. Vincent
Scott, Travis M.
Wilkins, H. E.

PHILO (CHAMPAIGN)

Scheurich, Jos.

PINCKNEYVILLE (PERRY)

Hiller, Frank Brooks
Kane, Wm. W.
Mathis, John Archibald, Hiller Hospital
Templeton, James Scott

PINKSTAFF (LAWRENCE)

Lindsay, Arthur Robt.

PIPER CITY (FORD)

Diddy, Lester Cornelius
Sauer, Henry Chas.

PITTSBURG (WILLIAMSON)

Fuller, R. C.
Tidwell, Wm. Flint

PITTSFIELD (PIKE)

Berry, Orland Harley
Dilts, Preston Vine
Lacy, Lincoln S.
McRaven, Cyrus Pilgrim
Peacock, Saml. B.
Shastid, William E.
Wells, Frank Newton

PLAINFIELD (WILL)

Finkle, John Ralph
Porter, Grant
Ryden, Frank Alfred
Tate, Elza Franklin

PLAINVILLE (ADAMS)

Aleshire, John Lenne

PLANO (KENDALL)

Lord, Arthur Evarts
Schaefer, Rudolph A.

PLEASANT HILL (PIKE)

Goodman, James Eugene
Wells, Russell Perry

PLEASANT PLAINS (SANGAMON)

Fink, Frank Carl
Huber, Fred Delos
Staples, Melville Wright

PLEASANTVIEW (Rushville P. O.) (SCHUYLER)

Corman, Verne Martin

PLYMOUTH (HANCOCK)

Irwin, Wentworth Lee
McDaniel, Thos. J.
Tuck, Wm. O.

POCAHONTAS (BOND)

Gordon, Louis James
Hediger, Edward
Wilkins, David R.

POLO (OGLE)

Beard, Leslie Alvey
Brigham, Chester Roy
Donaldson, Wm. Burns
Griffin, Leavitt Moore
Houston, Samuel D.
Keator, Louise Helmka. (See Dixon.)
McDaniel, LeeRoy
Rice, Eli Vestal

PONTIAC (LIVINGSTON)

Bawden, Frank Clare
Beatty, Ernest Gaston
Crocker, Fletcher Lovell
Daly, Victor MacKay
Dargan, Clarence Martin
Marshall, James Allan
Meeks, Clark Champlin
Middleton, Alonzo Bolen
Nicolay, John W.
Parkhill, Homer Lewey
Pearson, Norman
Phillips, David Patterson, Illinois State Reformatory
Riess, Carl John
Scouller, John D.
Tripodi, Donald Wm.
Ward, Carl Fletcher
Young, John Glenn

POPLAR GROVE (BOONE)

Brantley, John H.

PORT BYRON (ROCK ISLAND)

Dailey, Oscar S.
Johnson, Henry W.

POTOMAC (VERMILION)
Cossairt, Wm. S.
Ogle, Hiram E.

PRAIRIE CITY (McDONOUGH)
Cluts, Abram C.

PRAIRIE DU ROCHER (RANDOLPH)
Finley, John Thos.

PRENTICE (MORGAN)
Harris, Douglas Nebraska

PRINCETON (BUREAU)
Barrett, Chas. Cyrus
Flint, Oliver Josephus
Henry, Rolando H.
Inks, Frank Emerson
Larsen, Reuben Leonard
Malm, August H.
Nelson, Karl Magnus
Nix, Milton Arthur
Owens, Alfred Ellsworth
Poppens, Peter Heije
Scott, Chas. C.
Steele, Henry Danford
Troupa, Albert Burton

PRINCEVILLE (PEORIA)
Cutler, Morgan Geo.
Henson, Earle E.

PROPHETSTOWN (WHITESIDE)
Goff, Sidney Britton
Kendrick, Frank Jessess
Vandermyde, Isaac

QUINCY (ADAMS)
Austin, Adelbert Morton (Mendon); office, 529 Hampshire St.
Baker, Wm. Hayden, 1809 Maine St.; office, 529 Hampshire St.
Becker, Chas. Nicholas, Illinois Soldiers' and Sailors' Home and Hospital
Beirne, Henry Peter, 648 Hampshire St.
Bitter, Arthur Henry, 1654 York St.; office, 508 Maine St.
Bitter, J. W. Edw., 1130 State St.
Bitter, Milton Edward, 222 N. 24th St.; office, 629 Maine St.
Blickhan, Alois J., 601 Broadway; office, 701½ Maine St.
Blickhan, Norbert Alois, 601 Broadway; office, 701½ Maine St.
Blomer, Jos. Henry, 1620 Jersey Ave.; office, 508 Maine St.
Bortz, John Alex., 114½ N. 7th St.
Brenner, Franklin Theodore, 124 East Ave.; office, 529 Hampshire St.
Buchanan, Robt. F. (Dentist), 613½ Maine St.
Caddick, Earl L., 205 N. 24th St.; office, 529 Hampshire St.
Center, Chas. Dewey, 1824 Grove Ave.; office, 629 Maine St.
Cohen, Frank, 2325 Hampshire St.; office, 529 Hampshire St.
Collins, Harry Otis, 124 N. 8th St.
Ehle, Chauncey E., Illinois Soldiers' and Sailors' Home and Hospital
Ericson, Chas. E., 205½ N. 8th St.
Feldman, Harold Isadore (Intern), St. Mary Hospital
Gabriel, Carson King, 2315 Broadway; office, 508 Maine St.
Germann, Aldo Knapheide, 1231 Maine St.
Germann, Melinda C. Knapheide, 1231 Maine St.
Germann-Sinnock, Hildegarde Catherine, 1231 Maine St.
Githens, Wm. K., 1228 Vermont St.; office, 400 State St.
Green, Henry Lee, 623½ Hampshire St.
Harris, Richard August, 1523½ N. 6th St.; office, 529 Hampshire St.
Havens, James A. H., 524 Maine St.
Holliday, Marion E. Lamke, 719 Payson St.
Hoover, Seldon Rae, Jr., 722 N. 24th St.; office, 529 Hampshire St.
Johnson, David Powell, 237 N. 8th St.
Jurgens, Henry Jos., 1837 Jersey Ave.; office, 529 Hampshire St.
Knapheide, Wm. S., 224 S. 12th St.; office, 639 Maine St.
Knox, Thomas Blackburn, 534 N. 8th St.; office, 629 Maine St.
Koch, John Adolph, 2226 Jersey Ave.; office, 800 Broadway
Lambert, John R., 614 Spring St.
Liesen, Anna M., 10th and Spruce Sts.
Liesen, Francis H., 1117 Ohio St.
Maupin, Howard Steward, 2532 Maine St.; office, 508 Maine St.
McNeill, Charles, 428 6th Ave. N.
McReynolds, Ralph, 2300 York St.; office, 529 Hampshire St.
Merar, Thos. James, 629 Maine St.
Mercer, Ray, 1624 York St.; office, 508 Maine St.
Merritt, James Francis, 123 S. 8th St.
Miller, Clara, 1866 Grove Ave.; office, Hillcrest Sanatorium
Miller, J. Estill, 2125 Grove Ave.; office, 508 Maine St.
Montgomery, Edmund B., 1461 Vermont St.; office, 134 N. 8th St.
Nickerson, Levin H. A., 120 N. 18th St.; office, 615 Hampshire St.
Nunn, John C., 1601 Broadway
Pearce, Warren Fredk., 2130 Prairie Ave.; office, 529 Hampshire St.
Perley, Arthur Eugene, 506 Maine St.
Pollock, John Roy, 726 S. 22d St.; office, 508 Maine St.
Potter, Ralph Edgar, 930 N. 5th St.; office, 211 N. 5th St.
Reiffert, Marion F., 124 N. 8th St.
Rhodes, Thos. Whitson, 608 Broadway; office, Health Department
Richardson, Ethyl Harriet, 835 Cedar St.
Rieniets, John Henry, 726 N. 24th St.
Ross, Edward (intern), St. Mary Hospital
Shawgo, Kirk, 2043 Maine St.; office, 529 Hampshire St.
Shulian, Orie Frank, 300 East Ave.; office, 529 Hampshire St.
Steiner, David D., 931 N. 5th St.; office, 501½ Hampshire St.
Steiner, J. Carl, 224 S. 24th St.; office, 529 Hampshire St.
Stevenson, Walter Davis, 709 S. 24th St.; office, 508 Maine St.
Strohl, Harley (107 S. Lincoln Ave., Urbana); office, 110 S. 5th St.
Swanberg, Harold, 1437 Maine St.; office, 508 Maine St.
Trader, Wm. Arthur, 2311 Vermont St.; office, 535 Hampshire St.
Wells, Clarence, 315 N. 24th St.; office, 646 Hampshire St.
Werner, August William, 1401 State St.
Whitaker, Walter Merrill, 2535 Broadway; office, 508 Maine St.
Williams, Wm. Warren, 1251 Maine St.
Wineberg, Isaac Henry, 819 N. 5th St.
Zimmerman, Ernst, 320 S. 14th St.; office, 632½ Maine St.
Zimmermann, Wm., 513 Hampshire St.; office, 632½ Maine St.

RAMSEY (FAYETTE)
Farthing, Edgar W.
Fromm, August Molkel
Staff, Edmund Peter
Van Vranken, Geo. R.

RANKIN (VERMILION)
Goodwin, Grover Cleveland
Liggitt, Fleming L.

RANSOM (LA SALLE)
Ryan, Thos. Emmet

RANTOUL (CHAMPAIGN)
Ballantyne, Lowyd Whitcombe R., Chanute Field
Diller, Francis S.
Donovan, Wm. P.
Mason, Kirk Patrick, Chanute Field
Morton, Vernon Curry
O'Connell, John C.

RAVINIA (LAKE)
Lyons, Andrew James (See Hines)
Lyons, Mary Mulcahy
Weinfeld, Gustave Frankel (Moraine Hotel, Highland Park)

RAYMOND (MONTGOMERY)
Driskell, Cecil Rogers
Zulauf, Walter Christian

RED BUD (RANDOLPH)
Le Saulnier, Herman Louis
Pautler, Ermin Anthony
Riess, John Turk
Schellschmidt, Arthur F.
Smith, Charles G.

REDMON (EDGAR)
Jones, Wm. S.

RENAULT (MONROE)
Church, Harry Sylvester

REYNOLDS (ROCK ISLAND)
Danielson, May
Knutson, Anton
Moore, Landon Clay

RICHMOND (McHENRY)
Bettag, Jos. Lawrence
Cole, Mary C. Shibley
McLaughlin, Alan Fleming
Ward, Saml. R.

RIDGE FARM (VERMILION)
Dice, Henry Foster
Hubbard, Saml. A. Myers
Pierce, Jos. Cooper

RIDGWAY (GALLATIN)
Green, Edgar Agassiz
Murphy, John Chas.
Riley, Wm. H.

RINGWOOD (McHENRY)
Hepburn, Wm.

RIO (KNOX)
Brown, James Harry

RITCHEY (WILL)
Hazelton, LeGrand F.
Williams, Francis A.

RIVERTON (SANGAMON)
McMahon, Curtman
Smith, Jos. Henry

ROANOKE (WOODFORD)
Rodaway, Roy Thomas
Wyatt, James T.

ROBERTS (FORD)
Colteaux, John Alfred
Rueck, Erwin J.

ROBINSON (CRAWFORD)
Allen, Arthur Woodson
Allen, James Lavern
Brooks, Alan Goodwin
Carlisle, Jonas Whittier
Davis, James E.
Griffy, Roy
Long, John Wm.
Lowe, Ausby Lyman
Meserve, Arthur G.
Newlin, LeRoy
Rafferty, Herbert N.
Rafferty, Theodore Newell
Schmidt, Gustav F.
Schmidt, Gustav Francis, Jr.

ROCHELLE (OGLE)
Andreen, Frank Godfrey
Bogue, Arthur Reuben
Clarke, Chas. Perry
Diederich, Josie Kennedy
Kittler, Walter Eugene
MacEachern, Thos.
Schaller, Clarence Henry
Unger, Chas. P.

ROCHESTER (SANGAMON)
Bell, James Marshall
Wright, Lyman Dresser (See Springfield)

ROCK CITY (STEPHENSON)
Selden, Bryant Richard

ROCK FALLS (WHITESIDE)
Allen, Stephen Alex (505 B. Ave., Sterling)
Dow, Ernest L.
Frye, Clarence Maxfield (606 2d Ave., Sterling)
Pohly, Glenn Jacob

ROCKFORD (WINNEBAGO)
Ackemann, Harry Wm., 310 Auburn St.; office, 321 W. State St.
Anderson, Enor Gilbert, 1102 Broadway
Andrus, S. Claude, 624 Park Ave.; office, 425 E. State St.
Anthony, Robt. Ernest, 407 Churchill St.; office, 315 W. State St.
Bailey, Harry Brawley, 204 N. Independence Ave.; office, 504 E. State St.
Bartling, Carl Herman, 1811 Oxford St.; office, 401 W. State St.
Baumann, Theodore Andrew, 5210 East Dr.; office, 5420 N. 2d St.
Bendes, Jacob Harry, 1504 Myott Ave.; office, Rockford Municipal Sanatorium
Beyer, Wm. Stewart, 957 N. Church St.; office, 321 W. State St.
Beynon, James Valentine, 948 N. Main St.; office, 321 W. State St.
Bissekumer, Roger Martin, 1130 Crosby St.; office, 208 W. State St.
Blomberg, Thorsten Emil, 2322 E. State St.
Boswell, Clarence Henry, 1951 Harlem Blvd.; office, 303 N. Main St.
Bosworth, Robinson, Rockford Municipal Sanitarium
Bourland, Robt. Collyer, R. D. 9.; office, 226 S. Main St.
Bowers, Lewis Lenore, 1136 Grant Ave.; office, 208 W. State St.
Bullock, Norman Chas., 1728 Rural St.; office, 303 N. Main St.
Burdick, Ward Palmer, 127 N. Highland Ave.; office, 306 E. State St.
Calkins, Frederick W., 745 John St.; office, 206 W. State St.
Canfield, Harry Eugene, 1018 Harlem Blvd.; office, 202 S. Main St.
Carlstrom, Fred John, Parkview Ave.; office, 1139 Broadway
Catlin, Sanford Robinson, 1701 National Ave.; office, 321 W. State St.
Christenson, Albert Wm., 1536 Jackson St.; office, 208 W. State St.
Cibelius, Charles Anthony, 831 Overlook Rd.; office, 321 W. State St.
Connell, Arthur John, 2104 Auburn St.; office, 202 S. Main St.
Countryman, Howard Dick, 1507 Grant Ave.; office, 321 W. State St.
Crawford, Woodruff Lynden, 1328 Camp Ave.; office, 321 W. State St.
Culhane, Thos. H., 1003 N. Church St.; office, 202 S. Main St.
Cunningham, Oral Dewitt, 1512 Myott Ave.; office, 208 W. State St.
Cunningham, Wm. Harry, 1035 Harlem Blvd.; office, 301 W. State St.
Dagnault, J. Alphonse, Nelson Hotel; office, 208 W. State St.
Davis, Harry Hogle, 630 N. 1st St., office, 206 W. State St.
Davis, Henry Levi, 825 N. Church St.; office, 321 W. State St.
Dubiel, Chas. Roman, 1010 N. Franklin Pl.; office, 206 W. State St.
Earngey, Willard Phelps, 715 Reynolds St.; office, 208 W. State St.
Edson, Hobart Wm., 1334 E. State St.; office, 427 E. State St.
Egdahl, Anfin, 1823 Clinton St.; office, 321 W. State St.
Elmer, Wm. Hart, 910 Garfield Ave.; office, 321 W. State St.
Eneboe, Paul L., Swedish American Hospital
Erickson, Alfonso Howard, 120 St. Louis Ave.; office, 115 7th St.
Erickson, Chas. Adolph, 2410 Crosby St.; office, 427 7th St.
Fell, Egbert W., Dr. Wilgus' Sanitarium
Ferrias, Irving Benwith, 503 7th St.
Ford, Wm. Kenneth, 1911 Oxford St.; office, 321 W. State St.
Franceschi, Biagio, 1266 Clover Ave.; office, 1126 S. Main St.
Fringer, Wm. Rudisel, 109 Sheridan St.; office, 226 S. Main St.
Goembel, Emery Wells, 1030 N. 2d St.; office, 301 W. State St.
Grant, Richard Suydam (col.), 205 S. Main St.
Green, John Albert, 1536 Harlem Blvd.; office, 226 S. Main St.
Greenwood, Lilburn Silvas, 551 Lawn Dr.; office, 5450 N. 2d St.
Guagliata, Vincent, 1226 Garrison Ave.; office, 921 S. Main St.
Gunderson, Nordahl Osmund, 220 Fairfield Ave., office, 124 S. 1st St.
Hamlin, Fredk. J., 712 N. Court St.; office, 202 S. Main St.
Hanstrom, Clara Elizabeth, 514 6th St.; office, 321 W. State St.
Heinemeyer, Floyd LaVerne, 714 John St.; office, 321 W. State St.
Heller, Theodore, St. Anthony's Hospital
Ives, Warren Chamberlain, 332 King St.; office, 321 W. State St.
Johnson, James Knox, 515 Paris Ave.; office, 1102 Broadway
Johnson, Paul Thos., Winnebago County Hospital
Johnson, Thomas Arthur, 130 S. Prospect St.; office, 503 7th St.
Kile, Ray Porter, 2215 Clinton Pl.; office, 401 W. State St.
Kinley, Thos. Fulton, 714 Garfield Ave.; office, 208 W. State St.
Krauss, Thos. Fredk., 1324 Evelyn St.; office, 303 N. Main St.
Lang, Theodor, St. Anthony's Hospital
Leonard, Chas. Luke, 1632 Harlem Blvd.; office, 208 W. State St.
Leonard, Eugene Thos., 1632 Harlem Blvd.; office, 208 W. State St.
Leonard, Ruth, 1819 Oxford St.; office, 321 W. State St.
Lindstedt, Norman Arthur, 1127 12th Ave.; office, 1141 Broadway
Lofgren, Emil, 119 Summit St.; office, 501 7th St.
Lundholm, Jos. Sebastian, High Crest Rd.; office, 425 E. State St.
Maas, Elizabeth C., 212 N. Wyman St.
Magnelia, August Leo., Nelson Hotel; office, 208 W. State St.
Maloney, John Howard, 1108 North Ave.; office, 210 W. State St.
McCrimmon, Herman Patrick, 1821 Camp Ave.; office, 427 E. State St.
Mertz, Elmer Leonard, Spring Creek Rd., Bradley Heights; office, 321 W. State St.
Miller, Warren Mahlon, 2418 Clinton Rd.; office, 206 N. Wyman St.
Moore, Homer Frank, 927 N. Court St.; office, 321 W. State St.
Mosby, H. Petrie, 2209 Clinton Pl.; office, 303 N. Main St.
Nyman, Carl V., 1220 Revell Ave.; office, 501 7th St.
Ochsner, Emil A., 1702 E. State St.; office, 503 7th St.
Ochsner, Ernest E., 1535 E. State St.; office, 427 E. State St.
O'Donnell, Wm. J., 1801 National Ave.; office, 1027 S. Main St.
Olson, Olof Alfgred, 2016 S. 5th St.; office, 424 7th St.
Osborne, Ray Randle, 1357 5th Ave.; office, 528 W. State St.
Owen, Alfred Beam, 1717 Harlem Blvd.; office, 321 W. State St.

Palmer, Harold Dwight, 1718 Camp Ave.; office, Rockford Hospital
Pearman, Arthur, 1404 National Ave.; office, 321 W. State St.
Porter, John Rice, 724 Auburn St.; office, 321 W. State St.
Quandt, Eberhardt Hermann, 2301 Cumberland St.; office, 1305 Auburn St.
Quattlebaum, Edwin Gustavus, Jr., 125 Lawn Pl.; office, 226 S. Main St.
Ranseen, Carl Matthew, 1618 S. 5th St.; office, 244 7th St.
Ransom, Wilmot Leland, 328 King St.
Reedy, Robt. Aaron, 1854 E. State St.; office, 424 7th St.
Ritchie, Wm. J., 217 Guard St.; office, 419 W. State St.
Rogers, Maurice Pearse, Spring Creek Rd.; office, 401 W. State St.
Roseborough, Albert Skiffington, 523 N. Avon St.; office, 208 W. State St.
Rundquist, Emanuel Matthew, 431 Paris Ave.; office, 501 7th St.
Searle, Henry Reed, 2102 Auburn St.; office, 321 W. State St.
Settle, Emmett Bird, Swedish American Hospital
Severson, James Melvin, 1250 Garrison Ave.; office, 226 S. Main St.
Sheehe, Norman Leo, 531 Indian Terr.; office, 208 W. State St.
Shipley, Manly Harrison, 1030 Broadway
Shultz, Louis A., 634 Whitman St.; office, 208 W. State St.
Steurer, Justin, 421 N. Prospect St.; office, 206 W. State St.
Swanson, Adolph Martin, 423 London Ave.; office, 503 7th St.
Tenney, Roy Edward, 1964 Harlem Blvd.; office, 208 W. State St.
Thiell, James Edward, 1007 N. 2d St.; office, 226 S. Main St.
Tindall, Floyd Geo., 142 Lawn Pl.; office, 303 N. Main St.
Tulisalo, Oscar Wilhelm, 4620 Arlington St.; office, 305 S. Main St.
Turner, Franklin A., Faust Hotel; office, 208 W. State St.
Urbom, Carl V., R. D. 10; office, 327 7th St.
Van de Steeg, Wm. Gilbert, 2027 Melrose St.; office, 425 E. State St.
Van Voorhis, J. Frank, 1809 Post Ave.
Vetter, James Harry, 1940 Harlem Blvd.; office, 321 W. State St.
Waldron, Joel Harvey, 128 N. Church St.; office, 122½ N. Main St.
Walker, Chas. A., 1908 Harlem Blvd.; office, 202 S. Main St.
Warner, Harry Reuben, 813 Main St.; office, 321 W. State St.
Wehn, Clifford Chas., 1917 Harvard Ave.; office, 528 W. State St.
Weld, Anna, 977 N. Main St.; office, 307 N. Main St.
Weld, Edward Howland, N. 2d Street Rd.; office, 307 N. Main St.
Weld, Fredk. J., 1228 N. Court St.; office, 204 S. Main St.
Wiley, Howard Ellsworth, 222 N. 5th St.; office, 425 E. State St.
Wilgus, Sidney D., 1422 National Ave.; office (750 S. State St., Elgin)
Woodward, King Grier, 2219 Clinton Pl.; office, 321 W. State St.
Wormley, Harry Ralph, 901 Garfield Ave.; office, 315 W. State St.
Wright, Chas. Ely, 205 Cottage Grove Ave.; office, 206 S. Main St.
Yovaish, Walter, R. D. 7; office, 321 W. State St.

ROCK ISLAND (ROCK ISLAND)

Adler, Stuart Welsh, 1604 22d St.; office, 1802 3d Ave.
Anderson, Ernest Albert, 1010 21st St.; office, 3d Ave. and 15th St.
Asay, Jos. Elwell, 2433 13th Ave.; office, 1701 2d Ave.
Belyea, Reginald Joy, 3524 12th Ave.; office, 1725 3d Ave.
Bradford, Eli H., 602 18th St.; office, 1705 2d Ave.
Carlson, Hada M. Burkhart (1406 21st Ave., Moline); office, 230 16th St.
Condon, Edwin Francis, 710 25th St.; office, 124 18th St.
Craig, Geo. G., 1720 7th Ave.
Dart, Ralph, 741 22d St.; office, 1705 2d Ave.
Davenport, Frank Noble (See Moline)
Davis, Colbert Smith (col.), 720 13th St.
de Silva, Edward Burbank, 1802 3d Ave.
De Silva, Jos., 608 20th St.; office, 1802 3d Ave.
Eckhardt, Peter, 1102 12th St.
Economus, Themis C., 207 18th St.
First, Frank H., 1215, 20th St.; office, 208 18th St.
Friedman, Herman J., 2411 21st Ave.; office, 124 17th St.
Jones, Benj. E., 837 23rd St.
Keatley, Harry W., U. S. Relief Station
Lachner Bernard Joseph, 1631 24th St.; office, 1725 3d Ave.
Manning, Thos. F., 301½ 20th St.
Marston, Ernest L., 1930 10th St.
McEvers, Albert Edwin, 2204 30th St.; office, 1725 3d Ave.
Miller, Herbert Payne, 2329 20½ Ave.; office, 1705 2d Ave.
Moore, Nelvin Merritt, 2016 4th Ave.
Mueller, Albert Nicholas, 550 26th St.
O'Hern, Michael J., 326½ 20th St.
O'Neill, Clement Paul (630 10th St., Moline); office, 1802 3d Ave.
Ostrom, Louis, 1037, 21st St.; office, 124 18th St.
Ostrom, Meredith Louis Hult, 2220 26th St.; office, 124 18th St.
Paul, Danl. Frank, 1200 25th St.; office, 208, 18th St.
Petrie, Marietta Bechtel, 1318 44th St.; office, 1705 2d Ave.
Reed, Cora L., 1920 4th Ave.
Robb, Chas. Elbert, 1725, 24th St.; office, 1725 3d Ave.
Robinson, Leon Edward, 1354 23rd Ave.; office, 1705 2d Ave.
Rochow, Carl L. F., 1612 22d St.; office, 208 18th St.
Sala, Roland Otto, 322 19th St.
Schroeder, Wm. Fredk., 1721 25th St.; office, 1725 3d Ave.
Shuman, Harry Willard, 923 23rd St.; office, 1725 3d Ave.
Snively, Wm. D., 1216 16th St.; office, 1800 3d Ave.
Souders, John Cloyd, 1332 42d Ave; office, 1705 2nd Ave.
Stocker, Alfred, 1151 25th St.
Walker, Herbert Leroy, 940 23d St.; office, 1802, 3d Ave.
Williams, Arthur Edward, 1617, 21st St.; office, 1829 4th Ave.
Wray, Austin L., 1025 12th St.
Youngberg, Paul Philip (See Moline)

ROCKPORT (PIKE)

Welch, J. Harvey

ROCKTON (WINNEBAGO)

Cochran, Earl Robt.

ROODHOUSE (GREENE)

Bucklin, Nathaniel J.
Edwards, Orville Logan
Hamilton, Logan Orville
Hunt, Henry Eben
Smith, Henry Woodul
Thomas, Chas. Rainey

ROSELLE (DU PAGE)

Volberding, Harry Henry

ROSEVILLE (WARREN)

Clarke, Geo. Wm.
Hoyt, Lee Turner
Pittman, Wm. E.,
Simmons, Danl. Anderson

ROSICLARE (HARDIN)

DeVelling, John Robin
Hancock, Stephen Decatur

ROSSVILLE (VERMILION)

Donovan, Roscoe P.
Mason, John Cyrus
Ray, Danl. V.

ROUND KNOB (MASSAC)

Crow, James A.

ROUND LAKE (LAKE)

Levey, Harry Barney
Stanton, John Edward

ROXANA (MADISON)

Diehl, Christian Herman

ROYALTON (FRANKLIN)

Tweedy, Walter R.

RUSHVILLE (SCHUYLER)

Ball, Amos Willis
Bates, Geo. Campbell
Carey, Chas. Kennedy
Culbertson, Fredk. David
Fleming, Carl Marshall
Justus, Wm. F.
Munson, Henry Orson
Schenk, Myron Clark

RUSSELLVILLE (Vincennes, Ind., P. O.) (LAWRENCE)

Sprinkell, Clinton J.

RUTLAND (LA SALLE)

Peterson, Sophus Geo.

SADORUS (CHAMPAIGN)

Ricketts, Marion Masters

SAILOR SPRINGS (CLAY)

Shore, John P. J.
Sparling, Arthur Marion

ST. ANNE (KANKAKEE)

Benjamin, Ralph Linwood
Flint, Clarence Wallace (See Chicago)
Hagstrom, Wm. Jos.

PRESENT STATUS OF IDIOPATHIC ULCERATIVE COLITIS, WITH ESPECIAL REFERENCE TO ETIOLOGY

Moses Paulson, Baltimore (*Journal A. M. A.*, Nov. 25, 1933), points out that avitaminosis as a cause of ulcerative colitis is not supported by clinical experience, although the experimental evidence is striking. Vagotonia, as well as disturbances of calcium metabolism, has been thought to play a part in the etiology. There is neither satisfactory direct evidence nor properly controlled confirmatory studies establishing a specific or primary etiologic association between any bacterium and chronic ulcerative colitis. The definite connection between foci of infection and the etiology of this condition remains to be proved both experimentally and clinically. Experimental data indicate the nonspecificity of bacterial influences in this disorder. Recent work suggests that the greater and more prolonged the bleeding, regardless of the cause, the greater will be the diminution of the flora and the more marked the relative increase in cocci. These cocci, and to a lesser extent the other surviving intestinal organisms, normally present, probably are responsible for a secondary infection. Recurrences at present are certain to occur in all but the exceptional cases. The possibility of permanent cure is remote. There is no specific therapy, since the specific etiologic factor, if there is any, remains to be determined and the therapeutic response is not specific. Ileostomy is regarded as the operation of choice and should take place earlier than is practiced usually.

PRESENT STATUS OF ETHYLENE

In summing up the reported explosions, injuries and deaths, due to ethylene, Isabella C. Herb, Hubbard Woods, Ill. (*Journal A. M. A.*, Nov. 25, 1933), found twenty explosions, with one injury and five deaths due to ethylene, two deaths due to mixture of nitrous oxide-oxygen and ethylene and thirty-nine explosions with seven injuries and five deaths due to nitrous oxide-oxygen-ether. Nine explosions occurred when the machines had been idle from a few minutes to two or more hours. The machines had been used for ethylene administration in two instances and for nitrous oxide-oxygen-ether in seven of these explosions. From the foregoing it is evident that nitrous oxide-oxygen-ether forms as highly an explosive mixture as does ethylene, and precautions against this danger are fully as urgent as is required with ethylene-oxygen. Some of the injuries that occurred both with ethylene and with nitrous oxide-oxygen-ether were due to the ignition of the ether in the glass ether chamber of the gas apparatus. The breaking of this chamber scattered the glass and ether about the room, causing fires and burns. Two deaths were recorded due to impure ethylene (carbon monoxide), two in the hands of "inexperienced administrators," and one due to "vasodilatation." The author believes that the death due to vasodilatation should be attributed to operative conditions, such as hemorrhage, as ethylene does not produce or contribute to shock. If it destroys life, it does so through insufficient administration of oxygen, which would be asphyxia.

KNEE JOINT ARTHROPLASTY

W. Russell MacAusland, Boston (*Journal A. M. A.*, Nov. 25, 1933), in knee arthroplasty, has frequently encountered the complication of infection of the operative wound, from latent foci of infection. He is certain that the complication is not due to operative sepsis, as the infection has appeared too late after intervention. He presents four cases in which the infection could definitely be traced to a dormant focus situated elsewhere in the body and states that every possible site of a latent infection—pelvis, tonsils and teeth—must be carefully checked. He does not advise arthroplasty until one and a half years after all signs of infection have disappeared. When the joint is ankylosed as the result of a tuberculous process, mobilization is approached with extreme caution for such diseased joints may retain small walled-off foci throughout life. In the rare case in which the health is excellent and in which there has been no evidence of an active process for years, a tuberculous joint may be mobilized successfully. The most favorable ages for arthroplasty are those from adolescence to 40 or 45 years. The author emphasizes careful modeling of the joint surfaces in that it preserves the stability of the joint and avoids the development of arthritic changes in later years. He never sacrifices stability for the sake of obtaining motion. There is a provision made in his technic to preserve stability and to ensure a joint that will not be subject to arthritic changes.

IT ALL DEPENDS

Clarice—"Don't you think George dresses nattily?"
Flourine—"Natalie who?"—*U. S. S. Melville Job Order.*

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Wednesday, December 6, 1933
Regular Meeting

PNEUMONIA SYMPOSIUM

The Limitations of Serum Treatment. Lloyd Felton, Assistant Professor of Preventive Medicine and Hygiene, Harvard University Medical School.

General Discussion opened by Frederick Tice, Emeritus Professor Medicine, University of Illinois, School of Medicine, Charles Schott, Pediatrician, St. Joseph's and Children's Memorial Hospitals.

Hugh O. Jones, Director Medical Section, Chicago Board of Health.

Wednesday, December 13, 1933
Regular Meeting

UROLOGICAL SYMPOSIUM FOR THE GENERAL PRACTITIONER

By

UNIVERSITY OF ILLINOIS, COLLEGE OF MEDICINE

Opening Statement. D. J. Davis, Dean.

The Pathogenesis of Nephritis Due to Cold. Alexander J. Nedzel, Associate Professor of Bacteriology.

Demonstration and Significance of Office Laboratory Procedures of Practical Value in the Treatment of Genito-Urinary Infection. Russell Herrold, Assistant Professor of Surgery; Earl E. Ewert, Associate in Surgery.

The Significance of Microscopical and Macroscopical Blood in the Urine. Charles M. McKenna, Professor of G. U. Surgery.

The Relation of Hemophilia to Genito-Urinary Disease. Carroll L. Birch, Assistant Professor of Medicine.

General Discussion opened by Lloyd Arnold, Head of Department of Bacteriology.

Wednesday, December 20, 1933
Regular Meeting

GOITER SYMPOSIUM

Opening Statement—Dean Lewis, President, American Medical Association.

The Diagnosis and Management of Thyroid States as the General Practitioner Sees Them—Frank H. Lahey, Boston, Massachusetts.

Discussion: Surgery—Nelson Percy. Endocrinology—James H. Hutton; Internal Medicine, Charles A. Elliott; Radiology, Maximilian Hubeny; Ophthalmology, Michael Goldenburg.

KANE COUNTY

Kane County Medical Society met at the St. Joseph's Hospital in Aurora on December 13, 1933. A very fine dinner was served to sixty-five members, guests and Ladies' Auxiliary.

A short business meeting was followed by the election of officers for the coming year.

Dr. R. H. Graham of Aurora was elected President; Dr. R. C. Hetherington of Geneva, Vice-President; Dr. K. M. Manougian of Elgin, Secretary-Treasurer, retaining his post for the last year of his term of office of three.

Dr. Chas. F. Reed, the managing officer of Elgin State Hospital, gave a very excellent talk on "Various Phases of the Insanity Problem."

The number of the insane in and out of institutions, the criminals and insanity, the defectives and sterilization were pertinent questions asked and discussed.

Dr. F. N. Marstiller of Geneva spoke on "The County Supervisor and the Care of the Indigent." This was a revelation of the subtle ways of the politician in dispensing public funds for charity.

As a mark of last respect to a departing member, Dr. A. E. Diller of Aurora, the Society stood up while Dr. Schwingel of Aurora, read the obituary.

K. M. MANOUGIAN, M. D., Secretary.

PEORIA CITY MEDICAL SOCIETY

December 1, 1933.

At the meeting held Tuesday, December 5, Frederick Christopher, M. D., associate professor of surgery at Northwestern, discussed the following unusual surgical cases:

a. Ileac Carcinoid.

b. Rupture of the Intestine following Football Injury.

c. Multiple Neuritis following Gallbladder Surgery.

d. Spreading Carbuncular Infection.

e. Diaphragmatic Hernia.

f. Smith-Petersen Operation for Fractured Hip.

A vote on an amendment to the by-laws, Chapter 2, Section 5, as follows: "The Peoria City Medical Society enters into a gentlemen's agreement with the insurance companies that cases will not be lifted unless inadequate treatment has been given by the doctor in charge; that violators of Section 3, Article 4, of the Principles of Medical Ethics of the American Medical Association shall be suspended from the Peoria City Medical Society."

For purpose of information Section 3, Article 4, of the Principles of Medical Ethics of the American Medical Association is as follows: "A physician should never take charge of or prescribe for a patient who is under the care of another physician except in an emergency until after the other physician has relinquished the case or has been properly dismissed."

The nominating committee presented the following slate for election of officers on December 19:

President, Dr. A. P. Kannapel; 1st vice-president, Dr. George Parker; 2nd vice-president, Dr. W. W. Cutter; secretary-treasurer, Dr. C. W. Magaret; censor, Dr. Wm. Major; delegate, Dr. E. C. Kelly; alternate, Dr. Leslie Rutherford.

H. E. COOPER, Pres.
C. W. MAGARET, Secy.

Marriages

Harry John Fausel to Miss Lydia A. Schmidt, both of Chicago, at Cincinnati, November 30.

Rocco John Fazio to Miss Concetta Anna Vacca, both of Chicago, October 21.

J. Talbot Gernon, Chicago, to Miss Lorena Fredericka Mueller of Minneapolis, at Chicago, December 2.

Andrew Le Roy Karabin, Chicago, to Miss Clare Hazinski of South Bend, Ind., October 31.

Edward John Kloess, Belleville, Ill., to Mrs. Beulah Scott Mason of Leadwood, Mo., October 9.

Alvin Leroy Mathis, Elmhurst, Ill., to Mrs. Sue Ellen Lay Baisch of Oak Park, September 14.

Thomas Robert Plumer, Trivoli, Ill., to Miss Helen Cornelius of Peoria, November 15.

Ivan Magnus Sandberg, Lostant, Ill., to Miss

Charlotte Drew of Iron Mountain, Mich., at Tiskilwa, October 13.

William Christopher Schiele, Galena, Ill., to Miss Ruth Enderes at Joliet, October 8.

Rudolph B. Siegert, Pana, Ill., to Miss Margaret Mary Twiss of Chicago, in November.

Charles G. Smith, Red Bud, Ill., to Miss Madlen Hauff of Chicago at West Chester, Pa., October 4.

Paul E. Swanson, Peoria, Ill., to Miss Elizabeth Christensen of Virginia, Minn., September 2.

Personals

Dr. Agnes Beulah Cushman discussed "Pituitary Headaches" before the Chicago Council of Medical Women, December 1.

Dr. Harriet Daniel, Murphysboro, has been appointed pediatrician to the state health department, it is reported.

Dr. Harold Hoover has been appointed assistant in medicine in the department of internal medicine, University of Illinois College of Medicine.

Among other speakers, Dr. Joseph Greengard spoke on "Comparative Tuberculin Tests in Children" before the Chicago Tuberculosis Society, December 14.

Dr. Ernest Sachs, St. Louis, spoke before the St. Clair County Medical Society in Belleville, December 3, on "Diagnosis and Treatment of Brain and Spinal Cord Injuries."

Dr. Max Thorek has been elected a Corresponding Member of the Surgical Society of Madrid, Spain.

Dr. Otto H. Crist, Danville, was elected president of the Wabash Valley Aesculapian Society recently. The semiannual meeting will be held in Danville in May.

At a meeting of the Chicago Society of Internal Medicine, November 27, Dr. Joseph L. Miller, among others, spoke on "Chronic Rheumatic Diseases of the Spine."

Dr. Joseph L. Miller, Chicago, was among the speakers at the meeting of the Tri-County Medical Society (Henry, Knox and Warren), November 16; his subject was treatment of migraine.

Dr. David L. Bley, Staunton, announced his retirement from practice at a dinner, November 14, in honor of his eightieth birthday, newspapers reported. He has practiced medicine in Staunton for fifty-eight years.

The Chicago Laryngological and Otological Society was addressed, December 4, by Drs. Henry C. Sweany on "Pathogenesis and Diagnosis of Bronchogenic Carcinoma" and Francis L. Lederer on "Pathogenesis and End Results of Sinus Thrombosis."

Dr. William E. Kendall has been appointed chief medical officer of the Edward Hines, Jr., Hospital, Hines, succeeding Dr. William G. Cassels, who has gone to Washington, D. C., to serve as a member of the board of appeals in the Veterans' Administration.

Dr. John Philip Sandblom, Orebro, Sweden, among others, spoke at a meeting of the Chicago Society of Internal Medicine, December 18, on "Physiology of the Human Gallbladder Studied in Connection with Blood Transfusion and After Stomach Operations."

Speakers before the Chicago Surgical Society, December 1, included Drs. Alfred W. Adson and Winchell McK. Craig, Rochester, Minn., on "Diagnosis and Surgical Treatment of Spinal Cord Tumors" and "Surgery of the Sympathetic Nervous System," respectively.

Dr. E. J. Berkheiser addressed the Peoria Medical Society Dec. 19th on "Fractures of the Ankle Joint."

Speakers before the Chicago Gynecological Society, December 15, were Drs. George T. Palmer, Springfield, on "Tuberculosis in Its Relation to Pregnancy," and Irving F. Stein, "Oxygen Pneumoperitoneum in the Diagnosis and Treatment of Tuberculous Salpingitis."

Speakers before the Chicago Pathological Society, December 11, included Drs. Theodore E. Walsh and William E. Adams on "Observations on the Cytology of Nasal Polyps" and "Vascular Changes in Chronic Experimental Atelectasis of the Lungs," respectively.

Dr. Dean Lewis, Baltimore, President, American Medical Association, gave an address, December 19, in Thorne Hall, Northwestern University Medical School, under the auspices of Pi Kappa Epsilon Fraternity. The subject will be "Tumors of the Sympathetic Nervous System and Their Clinical Syndromes."

At a meeting of the La Salle County Medical Society in La Salle, November 23, the speakers

were Drs. John T. Murphy, Toledo, Ohio, and Vincent J. O'Conor, Chicago on "Cancer of the Ovary" and "Recent Advances in the Field of Genito-Urinary Surgery," respectively.

Plinn F. Morse of Detroit has been invited to address the Sangamon County Medical Society in Springfield on February 1. His subject will be "Differential Diagnosis of Enlargements of the Spleen."

Dr. Jesse R. Gerstley addressed the Illinois Division of The American Association of Hospital Social Workers on the evening of December 11, 1933. His subject was Chorea.

Miss Jean McArthur, Secretary of the Educational Committee, addressed the Senior Class of the George Williams College, December 22.

The Educational Committee has offered to arrange a program on cancer, including a lecture and a showing of the Canti film, for the smaller colleges of the State. Replies have been received from six college presidents requesting such programs early in 1934.

News Notes

—Speakers before a joint meeting of the Chicago Roentgen Society and Chicago Orthopedic Club, December 14, included Drs. Julius Brams on "Congenital Absence of the Femur" and Charles N. Pease, "Injuries to the Intervertebral Disk and Vertebra Following Lumbar Puncture."

—Forty staff members of the University of Illinois College of Medicine, Chicago, visited the Urbana campus, November 17, and were addressed, among others, by George L. Clark, Ph. D., on researches of medical interest from the x-ray laboratory; Elmer Roberts, Ph. D., genetic studies on inheritance of resistance to bacterial infection, and Frederic R. Steggerda, Ph. D., absorption and excretion in the colon.

—The 1933 DuPage Co. Medical Society Golf Tournament was won by H. F. Langhorst, Elmhurst, Ill. I. F. Glasener of Lombard was runner-up.

—The Elmhurst Hospital Staff Tournament was won by E. F. Worsley of Downers Grove.

—At the first meeting of the state board of public health advisers, December 4, called by the state health commissioner, three committees were appointed to work out details and recommend practicable programs for dealing with heart disease, amebic dysentery and trachoma. It was recommended at this meeting that the state department of health discontinue its treatment of patients with trachoma and restrict its activities in this connection to education in preventive practice. The promotion of prophylaxis against diphtheria and typhoid and the early adoption of a vigorous state-wide program for the control of heart disease were urged.

—At a meeting of the Peoria City Medical Society, November 21, Broda O. Barnes, Ph. D., Chicago, discussed "Studies on the Pituitary Especially Related to Diabetes."

—The McDonough County Medical Society was addressed in Macomb, November 14, by Drs. Frank J. Jirka and John J. McShane, Springfield, on epidemic encephalitis and scarlet fever control, respectively. Mr. S. V. Layson discussed milk sanitation. All represented the state health department.

—Beginning January 1, a course on ophthalmology will be carried on in the hospitals of Chicago for interns and residents in this specialty, it has been announced. Two hundred hours of instruction will be given by fifty-three instructors from the universities and hospitals in the city, the lectures to be divided evenly between the fundamental and the clinical branches. Practically all the lectures will be delivered at the Illinois Eye and Ear Infirmary.

—Dr. William J. Benner, Anna, was chosen president of the Southern Illinois Medical Association at its fifty-ninth annual meeting in Centralia, November 3. Dr. Ben Fox, West Frankfort, was named secretary, and Mount Vernon designated as the place for the next annual meeting. Speakers included Drs. Vilray P. Blair and Harry S. Crossen, St. Louis; Walter C. Alvarez, Rochester; George T. Palmer, Springfield; Andy Hall, Mount Vernon; William H. Smith, Benton, and Philip H. Kreuscher, Chicago.

—Dr. Anton Elschnig, professor and head of the department, German University Eye Clinic, Prague, Czechoslovakia, will conduct a course on intracapsular extraction of cataract, February 27, under the auspices of the Chicago Ophthalmological Society. An illustrated lecture early in the afternoon will be followed by operations on patients before groups of not more than ten

registrants. The registration fee is $10. Professor Elschnig will address the society, February 26, on "Extraction of the Lens in Myopia." Further information may be had from Dr. Theodore M. Shapira, 58 East Washington Street.

Deaths

ALEXIS B. BARKER, Peoria, Ill.; Cincinnati College of Medicine and Surgery, 1892; member of Illinois State Medical Society; aged 58; died, September 10, of pulmonary tuberculosis.

DANIEL BREWER, Fairbury, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1876; Hahnemann Medical College and Hospital, Chicago, 1877; member of the Illinois State Medical Society, aged 90; died, November 1, as the result of a fall.

EDMUND CHRISTIE, Chicago; McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1882; aged 72, died, September 8, in the hospital of St. Anthony de Padua, of injuries received in a fall.

JOHN FRANCIS CORBIN, Galesburg, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; aged 63; died, December 1, of bronchitis.

FRED SARGEANT CROCKER, Chicago; Rush Medical College, Chicago, 1897; aged 63; died, November 30, of cerebral hemorrhage.

THEODORE W. CULP, Ava, Ill.; Misosuri Medical College, St. Louis, 1888; aged 68; died, November 19, of myocarditis.

ADAM ELMER DILLER, Aurora, Ill.; Northwestern University Medical School, Chicago, 1907; a Fellow, A. M. A.; fellow of the American College of Surgeons; on the staff of St. Joseph Mercy Hospital; aged 54; died, November 30, in the Copley Hospital, of arteriosclerosis.

JAMES HENRY EDDY, Lakewood, Ill.; College of Physicians and Surgeons of Chicago, 1889; formerly a member of the school board; aged 70; died, November 9, in the Shelby County Memorial Hospital, Shelbyville, of injuries received in a fall.

SHEFTEL JACOB ELNER, Chicago; University of Illinois College of Medicine, Chicago, 1913; aged 63; died, November 24, of coronary occlusion and angina pectoris.

ROBERT A. FERGUSON, Bellair, Ill.; Indiana Medical College, Indianapolis, 1878; member of the Illinois State Medical Society; Civil War veteran; aged 90; died, October 21.

HORACE GIBSON, Sheldon, Ill.; Northwestern University Medical School, Chicago, 1892; member of the Illinois State Medical Society; for many years mayor of Sheldon and member of the school board; aged 76; died, November 15, of coronary and cerebral thrombosis.

JOHN FERDINAND GOLDEN, Chicago; Northwestern University Medical School, Chicago, 1903; a Fellow, A. M. A.; clinical professor of surgery, Loyola University School of Medicine; fellow of the American College of Surgeons; clinical assistant in surgery, Rush Medical College, 1904-1906; instructor in surgery, 1906-1910, and associate in surgery, 1910-1920, at his alma mater; on the staff of the Mercy Hospital; aged 53; was killed, November 20, when he fell from an eighth story window.

FRANK WISE GOODELL, Effingham, Ill.; Butler University Medical Department, Indianapolis, 1880; past president of the Effingham County Medical Society; formerly county coroner; at one time on the staff of St. Anthony's Hospital; aged 74; died, November 21.

CHARLES BERRIEN HALL, Chicago; Hahnemann Medical College and Hospital, Chicago, 1886; aged 73; died, November 14, of chronic myocarditis.

CALVIN T. HOOD, Chicago; College of Physicians and Surgeons of Chicago, 1885; member of the Illinois State Medical Society; on the staffs of the Cook County, Illinois Masonic and Garfield Park hospitals; aged 71; died, November 25, at Rochester, Minn., of heart disease, following an operation for goiter.

ELMORE W. LE ROY, Chicago; Hahnemann Medical College of Philadelphia, 1883; a Fellow, A. M. A.; aged 73; died, November 26, in Gary, Ind., of cerebral hemorrhage.

ULYSSES GRANT MASON, Chicago; Meharry Medical College, Nashville, Tenn., 1895; aged 60; died, October 5, of coronary occlusion.

EDWARD ENGLETON MOORE, Wilmette, Ill.; Dartmouth Medical School, Hanover, N. H., 1884; aged 77; died, November 1, in the Kankakee (Ill.) State Hospital, of senile dementia and chronic myocarditis.

FRANKLIN J. OSHAY, Ladd, Ill.; Rush Medical College, Chicago, 1889; aged 71; died, September 26, in the East Moline State Hospital, Moline, of chronic nephritis and myocarditis.

CHARLES M. OUGHTON, Evanston, Ill.; Rush Medical College, 1884; a practitioner in Hyde Park more than 40 years; aged 71; died, December 8, of chronic myocarditis.

GEORGE HERBERT SMALL, Bloomington, Ill.; Hahnemann Medical College and Hospital, Chicago, 1903; aged 57; died, October 29, of uremia.

KARL FORBES SNYDER, Freeport, Ill.; Northwestern University Medical School, Chicago, 1902; a Fellow, A. M. A.; fellow of the American College of Surgeons; on the staffs of the Evangelical Deaconess, St. Francis and Freeport Methodist hospitals; aged 57; died, November 28, of a self-inflicted bullet wound.

CHARLES ELMER SPRING, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1893; aged 63; died, November 9, in the Billings Memorial Hospital, of a tumor of the prostate.

CLEMENT O. SULLIVAN, Monee, Ill.; Chicago College of Medicine and Surgery, 1912; aged 47; died, October 26, of an overdose of morphine, presumably self administered.

CHARLES L. VAN DOREN, Urbana, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1881; aged 76; died, October 27.

ELMER THOMAS WHITE, Chicago; Homoeopathic Hospital College, Cleveland, 1883; aged 71; died, December 2, of chronic myocarditis.

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